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THE R. O. T. C. MANUAL

SENIOR COURSE
(2nd Year Advanced)

A Text Book For The Reserve
Officers Training Corps

BY

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Major E. B. Garey, Baltimore, Md.
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*To the college men who fell in the
World War, these four volumes are
respectfully dedicated.*

The Lord Baltimore Press
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FOREWORD.

The R. O. T. C. needs text books to permit its personnel to avail themselves of the expeditious instructional academic methods in use in all schools, both civil and military, of our country. The War Department, under the press of more urgent work, has as yet been unable to issue such books. In their absence these four volumes of "The R. O. T. C. Manual," written by earnest and able officers of our army will greatly aid in the acquirement of a good and quick knowledge of the elements of military training.

They are well arranged and fitted for both indoor and camp use. Their adoption of pictorial instructional methods will prove specially useful to our young men who are accustomed to acquiring knowledge from illustrations. They furnish decided additions to former methods of teaching.

The subjects are treated in a clear, wholesome, instructive manner. The doctrine is substantially that of our best military teachers.

In the publication of these volumes the authors have rendered great service to our country.

C. S. FARNSWORTH,
Major General, U. S. Army.

AUTHORS' PREFACE.

The Reserve Officers' Training Corps is the visible source from which the nation must draw the vast number of trained junior officers who must lead its forces in the event of a great war. It is one of the most important elements in our scheme of National Defense. The Great War has proven that troop leading in modern combat requires a higher degree of efficiency and training than ever in the past. This complex training cannot be acquired by magic within a few weeks after the outbreak of war. The R. O. T. C. is accordingly an institution of national importance, and its success and efficiency are matters of national concern.

But in addition to its importance to the National Defense, a proper course of military instruction, including discipline and training in the direct and practical methods of accomplishing results characteristic of military procedure, is of the greatest benefit to the students in their future careers in civil life. Such a course enriches the educational resources of our universities, colleges and schools—a fact now generally recognized by all the leading educators of our country. But a mere continuous round of infantry drill outdoors, and lectures indoors, does not constitute such a course.

The War Department has accordingly prescribed a most complete, thorough and ambitious course of training for the R. O. T. C. But the Professor of Military Science and Tactics at the college has heretofore been left largely to his own resources in conducting the course. In addition to conducting the course he has been compelled, unaided, to create it. No suitable text books which might be used by his classes were available to cover the recent War Department program of training. The subject matter of the course is distributed through nigh a hundred government manuals and pamphlets, most of them not prepared to meet the needs of the R. O. T. C.

Under such conditions a uniformly high standard of instruction at all colleges was manifestly impossible. If the Military Department is to take its place on an equal footing of importance and dignity with other college departments (a consummation most earnestly to be desired) it must have a definite course of theoretical and practical instruction, set forth in standard text books equal in all respects to other excellent college texts. The lack of such text books has constituted the greatest weakness of the R. O. T. C. To remove this weakness would be an important service to the national defense, and would raise the national standard of education.

In planning text books for the R. O. T. C. the authors have been actuated by the foregoing considerations. Their efforts have resulted in a set of texts that are offered in the hope that they will prove to be worthy of the cause that they are meant to serve.

This set of text books consists of the following four volumes:

- Vol. 1. The R. O. T. C. Manual, Freshman Course (1st Year Basic).
- Vol. 2. The R. O. T. C. Manual, Sophomore Course (2nd Year Basic).
- Vol. 3. The R. O. T. C. Manual, Junior Course (1st Year Advanced).
- Vol. 4. The R. O. T. C. Manual, Senior Course (2nd Year Advanced).

The texts have been prepared in strict accordance with the programs of the War Department, both in letter and in spirit. They are, however, no mere compilation of government publications, but all have been specially prepared to meet the special needs of the R. O. T. C. Certain of the government manuals were found to be admirably adapted to these needs, for example the publication on Rifle Marksmanship. These have been included with little or no change. In most cases it was deemed advisable to prepare entirely new texts. These are based on the recognized training doctrines of the U. S. Army, as set forth in the publications, and exemplified

in the courses at the service schools. The principles enunciated in the War Department publications have been expounded, enlarged upon, and copiously illustrated with drawings, practical problems, and exercises, all prepared especially for these books.

The course as herein set forth will be found most thorough, practical and complete. It is designed to meet fully the requirements of those institutions devoting a considerable amount of time to military instruction, and sets a high standard for such institutions. Colleges and schools where a lesser time is devoted to the subject may not be able entirely to complete the course herein laid down. It appeared to be wise, however, to base the work upon maximum requirements. It will be a simple matter to curtail a course containing more than can be covered, but difficult to expand and supplement one which is incomplete and insufficient.

The subject matter for the four years of the college course, and within each year, has been arranged in the logical order. The student who completes one year of this course will have learned those things which a prospective enlisted man should know, and which should also be the first things taught to a prospective non-commissioned officer. If he completes two years of the course he will have received the training that a non-commissioned officer should have, or that should be the groundwork in the training of an officer. Finally, if he completes all four years, he will have been taught the things that a junior officer should know, and which should be the groundwork in the training of an officer of any rank. The course is thus logically progressive. If discontinued at any time the student will have derived the maximum of benefit possible up to that time.

Various minor or subsidiary subjects are distributed throughout the four years in the order in which they should be learned.

Conditions at different institutions and in different parts of the country vary widely. The Professor of Military Science and Tactics may find it advisable to modify slightly the order of training as herein laid down, to adapt it to conditions of weather and season, etc. This may readily be done, since the course as a whole is flexible, and each subject is complete in itself.

The original draft of these texts was issued in the form of lesson sheets to all R. O. T. C. units in the country. From a great number of the Professors of Military Science and Tactics at these institutions many helpful criticisms and suggestions have been received. These have enabled the authors to effect notable improvement in their texts.

It is impossible to here mention by name the many officers and men of the army who have given of their time and talent to insure the success of this work. The authors desire, however, gratefully to acknowledge the assistance and encouragement received, since without these the task could not possibly have been accomplished.

Not the least of our acknowledgments is due to our printers, The Lord Baltimore Press, whose efficiency and spirit of co-operation, together with the splendidly equipped plant they have placed at our disposal, have enabled us to issue these books in attractive guise, in what has seemed an incredibly short space of time.

To the authorities of The Johns Hopkins University we are deeply indebted for the exceptional courtesies and facilities of The Johns Hopkins Press, our distributor.

These texts have been produced under pressure to meet an urgent need. The authors are far from believing them perfect. New editions will be issued as often as is necessary to keep abreast of developments, and suggestions looking to improvement will be gratefully received.

THE AUTHORS,
By E. B. GAREY.

BALTIMORE, MD., August, 1921.

CONTENTS.

Military History.

Administration.

Minor Tactics.

ADDITIONAL INSTRUCTION.

Pistol Marksmanship.

MILITARY HISTORY.

LESSONS FROM THE MILITARY HISTORY OF THE UNITED STATES.

With Introductory Lectures Concerning International Economic Relations and the Military Policy and Resources of Our Country.

TABLE OF CONTENTS.

FIRST LESSON—*Lecture.*

A SIGNIFICANT ASPECT OF INTERNATIONAL ECONOMIC RELATIONS.

SECOND LESSON—*Lecture.*

A GENERAL CONSIDERATION OF THE MILITARY POLICY AND MILITARY RESOURCES OF THE UNITED STATES.

THIRD LESSON—*Study.*

DEVELOPMENT OF THE MILITARY RESOURCES AND MILITARY POLICY OF THE UNITED STATES—1774 TO 1845.

FOURTH LESSON—*Lecture.*

MILITARY POLICY AS EXEMPLIFIED IN THE AMERICAN REVOLUTION.

FIFTH LESSON—*Lecture.*

SIGNIFICANT BATTLES OF THE AMERICAN REVOLUTION.

SIXTH LESSON—*Lecture.*

MILITARY POLICY AS EXEMPLIFIED IN THE WAR OF 1812.

SEVENTH LESSON—*Lecture.*

SIGNIFICANT BATTLES OF THE WAR OF 1812.

EIGHTH LESSON—*Study.*

DEVELOPMENT OF THE MILITARY RESOURCES AND MILITARY POLICY OF THE UNITED STATES—1845 TO 1898.

NINTH LESSON—*Lecture.*

THE WAR WITH MEXICO. TAYLOR'S CAMPAIGN.

TENTH LESSON—*Lecture.*

THE WAR WITH MEXICO. SCOTT'S CAMPAIGN.

ELEVENTH LESSON—*Lecture.*

THE CIVIL WAR, PART I.

TWELFTH LESSON—*Lecture.*

THE CIVIL WAR, PART II.

THIRTEENTH LESSON—*Study.*

DEVELOPMENT OF THE MILITARY RESOURCES AND MILITARY POLICY OF THE UNITED STATES—1898 TO 1914.

FOURTEENTH LESSON—*Study.*

DEVELOPMENT OF THE MILITARY RESOURCES AND MILITARY POLICY OF THE UNITED STATES—1914 TO 1920.

FIFTEENTH LESSON—*Study.*

A PROPER MILITARY POLICY FOR THE UNITED STATES.

SIXTEENTH LESSON—*Practical exercise for class room.*

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NOTE.

The following lessons in Military History of the United States are numbered from one to sixteen, inclusive. By reference to the Table of Contents it will be seen that certain of the lessons are designated *lecture* and others *study*. By these designations it is intended to indicate to the instructor which of the lessons have been prepared with a view to their being assigned as study lessons to be prepared for recitation by the student and which have been written as lectures to be delivered to the class by the instructor.

The sixteenth lesson has been prepared as a form of practical class-room exercise which may be found desirable at the conclusion of the course and which will aid the student to review important topics before examinations.

All of the lessons may advantageously be assigned as study lessons at the discretion of the instructor.

MILITARY HISTORY.

FIRST LESSON.

A SIGNIFICANT ASPECT OF INTERNATIONAL ECONOMIC RELATIONS.

The big ideas, the principles that have been behind the struggles out of which the modern nations were formed, are essentially the same which have governed the policy of human conduct since the world began, or at least, from the time when history gives any record of human experience.

In the last analysis the goal of human endeavor has been and still is, *self-preservation*.

The instinct of self-preservation has not weakened with the advancement of civilization. On the contrary, its meaning has broadened through the successive stages of human development from the crudest phase, in which we may conceive that the preservation of individual life was the only concern, to the present highly organized state of human society, involving the possession of public as well as private property and the greater ideals of loyalty and duty to the *nation* even before the lesser, included family group or to one's individual self.

The more we know about the beginnings the better we are able to understand the forces which have operated to bring about the formation of those organizations known to modern history as the *nations* of the two hemispheres.

If one's conception of a nation were that of a people inhabiting continuous territory, speaking a common language, and having a common blood, how disconcerting would be the realization that frequently among the successful nations one or more of those attributes are totally lacking. For instance, the British nation inhabits widely separated fragments of two hemispheres and even within the British Isles are marked differences of blood. Yet this is probably the most successful of all the great nations. The people of the United States, though inhabiting a practically continuous territory are not consanguineous. The Austro-Hungarian nation inhabits continuous territory but the two principal elements of which its population is composed, are not descended from the same stock nor do they have the same native language.

To what, then, may the success of nations be ascribed?

Some writers have attempted to explain the success of nations upon the ground of *racial preeminence*. Others have insisted that *geographical and political surroundings* have been the main if not the sole causes of success.

Whatever the virtues of these two explanations may be, it is a fact patent to all, that an attempt to solve the racial maze of which any white nation is composed, with its multitude of blood mixtures, crossing and recrossing, would lead to a hopeless tangle.

It is equally true that *environment* has been a powerful factor in the histories of nations just as it was in the history of early man.

The element of danger from wild beasts first caused man to arm himself. Later the danger of attack from his fellowman forced him to improve his weapons for defense.

The elements of cold and heat drove him to the use of clothing and shelter while hunger sent him roaming in search of food.

As his needs became greater, or as the vicinity of his habitation ceased to provide means for satisfying his needs, it became necessary for the man's existence that he should get supplies from other sources.

It was then, probably, that man began to develop the resources of mind and the use of his physical powers which have become so highly magnified in the governments of modern nations.

These changes sprang out of necessity, for self-preservation. Their neglect or unskillful use meant enslavement or death. In each generation the most fit overcame the less fit, mastered them, acquired their property and survived.

So it was in the beginning that *environment* influenced *success* and so it is to-day.

In his interesting book "What is America?" Professor Ross tells us that at the time of the first census in 1790, the young nation had less than three million whites, of whom to judge by family names, 83.5 per cent were of English stock; 6.7 per cent, Scotch; 5.6 per cent, German; 2 per cent, Dutch; 1.6 per cent, Irish; and 0.5 per cent, French.

Should we therefore conclude that the success of the United States as a nation has been due to the preeminence of the English stock in the early days of the republic?

An examination of the facts shows that we are a composite people and if the explanation of our national success were to depend upon the proof of a set of dominating racial characteristics, where would the proof be found? Where should we begin and to what conclusion would all of the evidence lead?

The mere fact that the whole body of the citizens is composed of the descendents of European nations in varying percentages, with additional fragments drawn from Asia, Africa, and the original native Indian tribes, challenges the theory of racial preeminence.

Mere preponderance in numbers from any of the nations, from which the population of the United States is composed, should not necessarily lead to the conclusion that there is a corresponding racial preeminence in the character of the nation.

When the civilization of the fifteenth century touched the shores of America a new life was conceived, and the blood which flowed across the ocean and mingled in the embryo world of the west came from sources alien alike to each other and to the new *environment*.

The accounts of how some of the old world stock thrived in their new environment, adapting themselves to it, setting their minds and bodies to the severe task of carving new homes out of an ancient wilderness while others, actuated by motives of greedy exploitation, gradually receded from the conflict, are familiar stories which seem to point the moral that in the success of nations *strength of character and fitness to survive and to overcome adversity* are factors more potent and more to be desired than great numbers or audacious aggressiveness.

We may look with proud regard upon the men and women whose descendents we are. Whether they came to America in the sixteenth century or later; they are the people from which we receive the legacy that contains all that has made our nation what it is to-day.

Some of our citizens, deceived by the wonderful strides by which the nation has advanced in little over a hundred years from a confederation of struggling colonies to a place of first rank among the great powers, are in danger of concluding, if indeed they have not already done so, that Americans are, *ipso facto*, a better race than their cousins across the ocean.

Such a fallacy is unworthy of a people blessed with the heritage and traditions of those who are privileged to dwell in the "Land of the Free and the Home of the Brave." However, we conceive that there is a condition inherent in the population of the United States which has made an essential difference in our *national character* and which is the thing about the American that has been mistaken for a mark of superiority.

In order to state that characteristic difference it is necessary to digress for a moment.

In the days when Greece or Rome dominated the world the title of "citizen" was looked upon as a distinction of the highest importance and a privilege to be

jealously guarded. Constant wars bred in the inhabitant of a state a feeling of his own individual importance as a member of the nation. Those who were not *citizens* were classed under the general term *stranger*.

The *stranger* was forced to exert himself to a degree beyond what would have been necessary in a citizen. What he got he wrested from fortune by redoubled effort, by ingenuity, by method, by the exercise of every faculty that he possessed. What he held, he held by keener wit. No wonder then that the *stranger* often rose to greater wealth and frequently to greater power than the *citizen* who professed to scorn, yet was really jealous of, that success.

It was the world old game of the *survival of the fittest*.

All of that *energy* developed in the *stranger* was bound to have an effect upon the state. The effect was most beneficial in introducing competition and increasing production. Production called for markets; markets meant commerce, and commerce demanded transportation.

The so-called stranger set the wheels a turning and imparted new impulse to economic development. To-day conditions are different but the principle is the same.

Now we are ready to return to our main subject with this statement: We Americans are, so to speak, a *nation of strangers*, obedient to the economic principles which have always made a forward man of the *stranger*, and it is that in us which accounts for the wonderful energy, the driving force, the mounting ambition, the quick decision and rapid execution so marked in our people. It accounts for our large numbers of competent men and women and our self-reliant youths. It accounts for our adaptability and freedom from narrow conservatism.

When we consider that to our already highly energetic population there is being daily added a fresh supply of the *stranger* blood, by the steady stream of emigration which reaches our shores, it is apparent that this means of perpetual rejuvenation of the vitality of the nation must be utilized with the most careful discrimination, in order that our traditional institutions may be preserved.

In our references here to the *character* of a nation we mean the peculiar qualities impressed by nature and environment upon the citizenry, by which we are wont to classify their general conduct of action or attitude as distinguishing attributes of the nation. For example: With respect to a given proposition we might say that it is un-American if it should not conform with what tradition or experience had taught us to expect of the American people under the given or similar conditions.

Character is one of the forces which determine the success of a nation, and, since each nation has a distinctive character, its success will in a large measure, be determined by the degree to which that character is adaptable to the international life of the world, just as the character of the individual influences his success in the life of the community of which he is a member.

We know that nations have distinctive characters, we have already mentioned some of the most distinguishing characteristics of our own people. We know that nations have another attribute which distinguishes the individual citizen, that is, *conscience*. Of this we have many evidences in our own national history, such, for instance, as the return to the Chinese Government of that portion of the indemnity awarded to the United States after the suppression of the Boxer Rebellion in 1900. We know that nations have *ideals*, our own Declaration of Independence is sufficient evidence of it. If, therefore, we may attribute these characteristics to nations, we must at the same time grant that they are subject to other human qualities, the weak and base as well as the strong and good. In short, nations are essentially human and may be judged very much as are individuals.

If the *ideals* of a nation may be said to be the goal toward which its people are striving, then the national institutions of that people, their governmental, social, economic, educational, or religious organizations, may be likened to the mile posts which point the way and mark the distance along the course by which an athlete runs to reach the victor's laurel.

We conceive that in the hearts of all human beings the goal of their ultimate desire is Utopia. Yet so various and contradictory are the institutions of the

various nations at the present that we are justified in believing that the attainment of that ideal state is indeed hopeless so long as human nature continues to manifest itself as in the past.

The contradictory nature of national ideals is manifested, as we have implied, in national institutions. It appears most definitely in the doctrines upon which the various national governments are founded as, for instance, in the fundamental idea of our republic that "we hold these truths to be self-evident; that all men are created equal; that they are endowed by their Creator with certain inalienable rights; that among these are *life, liberty, and the pursuit of happiness.*" Again the same idea appears in the theory of the French Government founded upon "Liberty, Equality, Fraternity," while in contrast with these declarations appears the sinister spirit of autocratic domination and suppression manifested by the German Empire in its profane appeal to Heaven to bless a world conquest which would have ruthlessly extinguished the light of liberty and the hope of mankind.

We have, then, a means for judging of the *character* of a nation; for instance, the economic institutions of the United States are democratic, hence we may conclude that the national character of the greatest of the American republics is benevolent and we may expect corresponding national *conscience* and *ideals*.

To verify the truth of these premises, we have only to examine the history of our country.

To illustrate further, the institutions of the Kingdom of Prussia are monarchical and we may conclude that the national character is arrogant and we may expect to find a national conscience subservient to selfish ideals.

The aspect of international relations which we wish to bring particularly to your attention in this brief discussion is that which relates to the *fitness* of nations to succeed.

For example, we are all familiar with the expression "business method." It is therefore an easy matter for us to think in that term and to apply it to the economic institutions or "economic systems" of nations, that are the means by which they hope to secure success.

When, therefore, we wish to inquire into the *fitness* of a nation to succeed we have a means by which to judge, in the results obtained through its economic system.

The *fitness* of a business man is not judged of solely by the amount of profit he derives from his business or the degree to which he out-distanced his competitors. What, for instance, would we say of a business man who deliberately wrecks other men's business; who violates the law; who extorts unfair prices; who uses unfair or violent means, leaving his path strewn with wreckage and misery all for the sake of larger profits? Such a man would be considered an unfit associate in the business world.

So, too, with nations. Their immediate success is not to be considered as unqualified evidence of a fitness, unless it be consistent with the paramount laws which govern the destinies of mankind.

In general then we may say that those nations are most *fit* which have economic systems adaptable to the ultimate needs of the world; which are aiding and are so organically constituted that they can continue to aid mankind to reach his long cherished ideals of freedom, happiness, and peace.

There is a vast difference between legitimate business methods and predatory business methods. Nevertheless it is not to be understood that strong methods are not at times justifiable in legitimate business. Such action is often the only defense to which legitimate business has recourse in the yet imperfectly organized state of society. Again the very life of business is dependent upon the stimulation of competition and competition is a form of combat.

The same is true of many other activities that are absolutely essential to the existence of mankind for instance, the medical profession is eternally combating disease and the agriculturist combats the enemies of the harvest field. So, we see, war is constantly being waged for humanities' sake.

We do not advocate war. No one who has experienced war could ever wish to repeat it. We must, however, recognize the facts of life no matter how elemental and abhorrent that may appear to our twentieth century conscience else we will see our cherished ideals overthrown by evil forces.

We therefore insist that it is the part of wisdom to regard war as a natural phenomena in the international relations, just as it is in other phases of life.

The national economic systems tend to draw nations closer in bonds of sympathy when their interests are common and their courses run parallel, or to place them in a state of resistance toward each other, when their interests cross or run counterwise.

We feel quite confident that if the matter were given careful study it would be possible to show which of the nations of to-day are following parallel courses and which are embarked upon courses that are inevitably bound to cross. Perhaps with respect to some of the nations the answer is already apparent.

We know that Germany recently cherished an ambition to extend her so-called culture over the entire civilized world, under the delusion that by so doing she would render a service to mankind. Her course led her across the courses of many other nations and there immediately resulted a tremendous resistance in the form of armed conflict.

How far the World War will result in placing Germany on a course parallel with her recent antagonists, is a matter for conjecture.

No national career presents a more interesting study than that of the United States. We have said that our national character is benevolent and so are our ideals. We believe that our institutions are eminently fit to aid humanity. Our efforts with respect to certain dependent peoples have met with marked success and our policy with respect to South American nations has been the means of securing their immunity from foreign aggression. Yet, so many contentious, economic problems are involved in our present international relations, that it is difficult to see how the benevolent course of the United States may continue to be pursued without converging upon or crossing the courses of other nations.

In conclusion we wish to emphasize the thought that the economic existence of any people must depend upon the power of its government to protect the national interests. In the last analysis the survival of a nation will depend upon the *fitness* of its institutions for the development of those means and forces essential to *self-preservation* in the constantly changing order of world conditions, and it is evident that when a nation like the United States has taken under its auspices another nation, or nations, with the avowed purpose of enabling them to work out their own salvation unhampered by foreign interference, then the obligation to insure protection is extended and the protector nation is in honor bound before the world and in the name of humanity, to raise its strength to that point where a full discharge of its solemn obligations will no longer be a debatable question.

NOTE.—Should any time remain available at the conclusion of this lesson, let each student turn in to the instructor the following written exercise:

Write a brief defense in (150), (200), (300) words, of your opinion upon the following question: What has been the predominating influence in the formation of our *national character*?

SECOND LESSON.

A GENERAL CONSIDERATION OF THE MILITARY POLICY AND THE MILITARY RESOURCES OF THE UNITED STATES.

In our last lesson it was said that "the economic existence of any people must depend upon the power of its government to protect the national interests." In the United States the powers of the Government are derived from the people themselves. The Constitution of the United States contains all of the powers that have been considered necessary to enable the federal government to insure the domestic tranquility, general welfare, and common defense of the nation.

Among these powers are six, without which the Government might be unable to secure any of the blessings which the Constitution intends to insure. The powers we refer to are contained in Section 8 of Article I and are as follows:

(1) "To declare war"; (2) "To raise and support armies"; (3) "To provide and maintain a navy"; (4) "To provide for calling forth the militia"; (5) "To provide for organizing, arming and disciplining the militia," and (6) "To make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this Constitution in the Government of the United States, or any department or officer thereof."

These are the war powers of our Government and we shall learn in subsequent lessons what its policy has been in the exercise of these powers, that is to say, how they have been used.

There is another section of the Constitution which is of special interest in connection with our subject, which provides that: "The United States shall guarantee to every state in the union a republican form of government, and shall protect each of them against invasion, and upon application of the legislature, or of the executive (when the legislature cannot be convened) against domestic violence." Thus we see that our federal government has been expressly empowered to protect the economic welfare of the nation. It is with the knowledge that that authority does exist and with the assurance that it will be exercised, that our people have proceeded with the development of the national life we enjoy to-day.

We have seen by what powers the tranquillity of the states of the union is assured. We have seen that the benefits of a similar tranquillity may be extended to other nations by that same power. Perhaps it is in your mind to ask "By what means can the United States Government fulfill the guarantees of the Constitution?"

We are now speaking of the military powers, the war powers of the Government and, since they are the means of last resort, we shall assume that all other means, the means of peace, have been exhausted and that the employment of the military power has become necessary. Our answer to the question then is that in the last extremity the means upon which the federal government must rely in order to fulfill its duties, is the military **STRENGTH** that it has already created or can opportunely create out of its military **RESOURCES**.

It is necessary that you should understand that military **RESOURCE** and military **STRENGTH** are not at all the same things. Military **RESOURCES** are all of the means from which a nation may develop military **STRENGTH**. We will say that they are the materials and forces of which military strength is composed. Just, for example, as the cloth, thread, needles, sewing machine, and a great variety of other things including the power to drive the machine and the human hands and brain and interest to guide the whole operation, are the **MEANS** with which the suit of clothing you are wearing was made.

By using his **RESOURCES** the tailor created something definite, different, and distinctive, namely: Your suit of clothing. However, by using more or better resources he might have produced a finer garment. In the same way military resources may be used to create military strength and the quality and number of resources possessed by any government will determine the quality and degree of military strength that it can develop.

We cannot conceive of a government totally without military resources. If it have but a few men it will have at least one military resource. That is to say, **MAN-POWER**. Those few men may constitute a very inferior quality of military resource. They may be sickly, cripples or cowards. But if they be physically strong and active; if they be brave, courageous, patriotic and faithful, then they will constitute a very fine quality of military resource.

Now, if their government were to take those men and train them to skillfully perform the duties of a soldier, it would be developing its military **MAN-POWER RESOURCE** into military **STRENGTH**. Of course, we know that such a limited resource can produce only a weak power. However, that is the principle of the whole matter of military **RESOURCE** and military **STRENGTH** and we have only to raise the weak power to 23,908,576 and we shall have a figure that represents what the registered **MAN-POWER RESOURCE** of the United States was at the time we entered the war with Germany. This figure does not tell us what the maxi-

mun man-power resource of the Government was at that time. Among the whole population there were about 28,000,000 men who were not registered. Nor does the sum of these two figures, which is approximately 52,000,000, give us the true man-power resource of the nation for reasons which will presently be apparent. This is a point that must be well understood. Mere numbers of men of military age amongst its population, do not give a true measure of the military man-power resource of a nation. If this were not true, then we would have to say that among all of the nations upon the earth, China, with her vast population, has the greatest military man-power resource.

Several considerations enter into the question of what determines the true military man-power resource of a nation. We do not know the answers with respect to China because no one has ever taken the trouble to find them out so far as we know. However, we do know a very great deal with respect to the United States, thanks to the close examination of the resources of our country made necessary by the World War.

A brief statement of some of the considerations to which we have just referred and to the data which has been gathered with respect thereto, will be instructive. It must be kept in mind that we are now speaking of the military man-power resource and not of military strength.

After the numbers of men of military age have been determined, by census or otherwise, then the military man-power resource of a nation will largely depend:

First. Upon the numbers of men physically able to perform military duty of one kind or another. (During the World War the United States had in her army 3,208,446 drafted citizens out of which number 2,686,840 men were found to be physically fit to perform some kind of military duty. That is to say, of those examined 83.4 per cent were physically fit and 16.6 per cent were unfit.)

Second. The man-power resource further depends upon the numbers of men physically able to bear arms. Men fit to fight. (During the World War the United States had in her army 3,208,446 drafted citizens out of which number 2,259,027 were physically fit to become fighting men. This shows that 70.4 per cent only were physically fit to bear arms. Such large numbers of men were examined that the figures just given can be taken as a fairly reliable indication that the fighting man-power resource of the United States at the present time is only about 70 per cent effective.)

Third. The military man-power resource depends upon the patriotic virtues of the people. (In the period of the World War the United States had 328,000 draft evaders. This figure is subject to revision. It shows, however, that 1.3 per cent of the men who were registered for military service were not patriotic citizens.)

Fourth. The man-power resource is affected in various ways by the general state of education amongst the people, because it affects the rapidity with which troops may be trained and the reliability of their intelligence. (The percentage of illiteracy for the whole male population of the United States, 21 years of age or over, based upon the 1910 census, was 2,273,603 or 8.4 per cent. Of this number 1,406,364 were white and 867,239 were of all other races. It is a great burden for any nation to carry, when nearly $8\frac{1}{2}$ out of every hundred of its men are illiterate.)

These data give an idea of what is meant when it is said that *military RESOURCE and military STRENGTH are not the same thing*. To turn the military man-power resource into military strength requires a very definite process, the first step of which is *SELECTION*, by which the men are chosen for the things they are best fitted to do and the useful (men) are separated from the unuseful.

There is another side to this question which is of special interest in the United States at the present time. We have just emerged from the greatest war the world has ever experienced. On November 11, 1918, the United States had under arms about 4,000,000 men. What military STRENGTH do these men represent to-day? Supposing that those identical men could be assembled again and returned to their former military duties; would they constitute the same military man-power STRENGTH that they did at the date of the armistice? We know that everything

is subject to deterioration. That the best way to keep a machine in a good state of repair is to keep it running. Organizations or machines composed of men are equally, if not more, subject to deterioration than are such things as automobiles, or factories, mines and farms. We shall have to admit at once that all of the men who were in the military services at the time of the armistice are not now available. Some have died. Some have become invalids while others have passed beyond the top limit of military age. All of these are natural causes which have been at work steadily cutting down the numbers of trained men and diminishing the military man-power STRENGTH of the nation. But suppose that we were to assemble all that are left. Just what degree of military man-power strength would we have? Of course, no well-informed person would expect those men to be as good at their different jobs as they were just at the end of the war. However, there is a common mistake, one which history shows that the American people are very apt to make. That is the mistake of believing that the military strength developed during war will last, *per se*, for a long time during peace. The delusion is that a man who has once been trained in the duties of a soldier is ever thereafter fit and ready for such duties and that it is only necessary to assign him to a company and place a rifle in his hand and he will be an efficient soldier, instantly. The only ray of truth that we can see in this hallucination is that a man who has once been trained for a piece of work ought to be better than a green hand. But that is about as far as it is safe to go.

The fact of the matter is that it all depends upon the kind of training the man has had, the length of time, and the amount of change that there has been in his work since he was actually engaged in learning the job. To illustrate this point we have two cases that come within our experience of the past 60 years. First, the state of affairs at the end of the Civil War and the state of affairs at the end of the war with Germany.

At the end of the Civil War the United States had a great number of citizens who had been trained in the art of war through four years of hard campaigning and fighting. They were veterans in the true sense of the word. They had learned the habits of discipline, they had learned the habits of the soldier so thoroughly that for years after the war and even to this day those habits have clung to them. They were habits formed by long experience and had become natural to those men; whereas, at the end of the World War the case was quite different. To begin with, the United States was actually engaged in the World War only from April, 1917, to November, 1918, a period of 19 months. But our troops were not engaged in fighting all of that time. All of them were not even under training for the entire period. "The average American soldier who went to France received six months of training in this country before he sailed. After he landed he received two months of training before he went into the battle line. The part of the battle line that he entered was usually in a quiet sector and here he remained one month before going into an active sector and taking part in hard fighting."

It is a fact that the men who served in the World War were put through a very intensive, a very strenuous course of training. But it is also true that such a course does not produce lasting habits. In fact, the training under such conditions is so rapid and the men are called upon to absorb such a great mass of new information and they receive such a number of rapidly changing impressions that there is hardly an opportunity for habits to become formed. The result has been that when our men came back from the war and put on their more comfortable civilian dress they also resumed the more comfortable habits of civilian life. The habits which were natural to them through years of experience in times of peace had not been materially changed by their short experience in war.

We do not wish to intimate that the United States does not have a valuable military resource in the men who were trained in the World War, but we do most emphatically insist that it is a very poor business policy to carry those men, from year to year, as *assets in military value equal to what they were at the end of the year 1918*. The reasonableness of this statement is made apparent when it is

recalled that the age limits for military service during the war with Germany were between 18 and 45 years and that a man who had reached his 46 birthday was not considered as eligible for military service. These limits are subject to change by act of Congress, but experience has shown that they are fairly just and correct and we may presume that they will prevail in the future. It is, therefore, a simple problem in arithmetic to determine the number of years during which the citizens trained in the World War will remain a military asset to the nation, from the standpoint of age alone. Exact data for the solution of this problem are not available at the present time. However, we may proceed to illustrate the point with sufficient accuracy by using such data as we have, in the following manner: By dividing the ages from 17 to 46 into three nearly equal groups we will have one group from 18 to 27, inclusive. Another group from 28 to 38, inclusive. A third group from 39 to 45, inclusive. Upon the assumption, which is believed to be reasonable, that the first group will contain 70 per cent, the second, 20 per cent and the third 10 per cent of the total number of citizens who received military training in the World War, we are able to estimate that, due to age alone, 10 per cent of the recent citizen soldiery will cease to be a part of the nation's military man-power resource in the year 1924. Thirty per cent will similarly pass out in 1935 and 100 per cent will pass out in the year 1946. Thus, within 30 years from the date when the United States entered the war with Germany, the last vestige of her recent military man-power strength will have faded away.

We practice upon ourselves a cruel deception when we regard our military strength as a factor of constant value. But is the case not even worse when we allow ourselves to say, "we are prepared for war because we have on hand so many veterans of our last war?" Is it in keeping with the American sense of justice to say of our veterans, "let him who has borne the burden for one day, carry it to the end?" There is always a temptation to follow the line of least resistance, hence it is necessary for us to overcome that temptation and to insist that our military policy shall be in accord with all of our other national policies.

We have discussed the single subject of *MAN-POWER* at some length in order to distinguish between military *RÉSOURCES* and military *STRENGTH*. We might proceed in a similar manner to speak of other economic resources which are of military importance. However, the college man will have many opportunities to investigate the social, industrial, commercial and governmental institutions of our country and we desire now to review briefly some features of our national military policy.

"It is the traditional policy of the United States that the military establishment in time of peace is to be a small regular army and that the ultimate war force of the nation is to be a great army of citizen soldiers. This fundamental theory of military organization is sound economically and politically. The maintenance of armies in time of peace imposes a heavy financial burden on the nation, and the expenditure for this purpose should be kept at a minimum consistent with effectiveness for war. But reliance upon citizen soldiers is subject to the limitation that they cannot be expected to meet a trained enemy until they, too, have been trained."

"Our history is full of the success of the volunteer soldier after he has been trained for war, but it contains no record of the successful employment of raw levies for general military purposes. It is, therefore, our most important military policy to devise means for preparing great armies of citizen soldiers to meet the emergency of modern war. The organization of the Regular Army is but a small phase of this problem. It is simply the peace nucleus of the great war army, and its strength and organization should always be considered with reference to the great war force which cannot be placed in the field until war is imminent."

"The problem is one of expansion from a small peace force to a great war force. Its solution, therefore, involves the provision of a sufficient peace nucleus, the partial organization and training of citizen soldiers in peace, and provisions for prompt and orderly expansion upon the outbreak of war. But the practical solution of the problem cannot be met by the promulgation of a general theory. The

army at any time and place must be strong enough to defeat any enemy that may oppose it at that time and place. We are concerned more with the time required to raise the force of trained troops than with their ultimate numbers."

"If we need 60,000 soldiers in a given place within 30 days and can only deploy 50,000 soldiers in that time and place, we are not prepared for the emergency even if our plans provide for ten times that number at some time in the future."

"The time required for the training of extemporized armies depends largely on the presence or absence of trained officers and non-commissioned officer-instructors. If there be a corps of trained instructors and a tested organization of higher units with trained leaders and staff officers, the problem of training is limited to the training of the private soldier. This can be accomplished in a relatively short time, and under such conditions if arms and equipment are available, a respectable army can be formed in six months. But where the leaders are untrained and where officers and men must alike stumble toward efficiency without intelligent guidance, the formation of an efficient army is a question of years. Indeed such a force cannot become an army within the duration of modern war. As the American war of 1861-1865 presents the singular phenomenon of two extemporized armies gradually developing while in conflict with each other, it is a most remarkable record of the evolution of such forces."

"In the conflicts of 1861 both officers and men were untrained for the duties demanded of them. Bull Run disorganized both armies. One was demoralized by defeat, the other by victory. By 1862 efficient regiments, brigades and divisions had come into being, but the conduct and leading of higher units was still imperfect. It was not until 1863 that the armies confronted each other as complete and efficient military machines."

In contrast with the conditions of 1861, the speed with which the United States was able to train, equip and transport a respectable army to the scene of battle in the war with Germany, was remarkable. This was an extemporized army but conceived in a manner very different from what had formerly been the practice. In 1861 the United States started preparation for war with the traditional "volunteer" system and later adopted the "draft." In 1917 the Government started with the "Selective Service Draft" system and was enabled to maintain a logical organization throughout the war, consistent with the military and economic requirements. "During the war with Germany twice as many men were raised as during the Civil War, and at one-twentieth of the cost. This does not mean one-twentieth of the cost per man, but that twenty times as much money was actually spent by the Northern States in the Civil War in recruiting their armies as was spent for the same purpose by the United States in the war with Germany. In this war 60 per cent of all armed forces were secured by the draft as compared with 2 per cent in the case of the Civil War."

"The willingness with which the American people accepted the universal draft was the most remarkable feature in the history of our preparation for war. It is a noteworthy evidence of the enthusiastic support given by the country to the war program, that, despite previous hostility to the principle of universal liability for military service, a few months after the selective service law was passed, the standing of the drafted soldier was fully as honorable as was that of the man who enlisted voluntarily. Moreover, the records of desertions from the army show that the percentage was smaller than in previous wars and a smaller percentage occurred among the drafted men than among those who volunteered."

In the past it has been the policy of the United States to employ armies in which a distinction was made between the Regular Army, the volunteer and the militia components. In the war with Germany these distinctions disappeared and all elements were blended in the "Army of the United States." This new policy is incorporated in the Act of Congress of June 4, 1920, which provides for one army consisting of the regular establishment, the national guard and the organized reserves. We shall have occasion to examine the new American Army in a subsequent lesson and in the meantime each member of the Reserve Officers' Training Corps should think of himself as a potential part of it.

THIRD LESSON.

DEVELOPMENT OF THE MILITARY RESOURCES AND MILITARY
POLICY OF THE UNITED STATES—1774 TO 1845.

Policy.

What is "POLICY?" The term "policy," in its primary significance, comprehends the fundamental constitution or frame of civil government in a state.

How expressed. Among modern states the frame, or basis of government is usually expressed in written form. Such writings are for the purpose of defining the form of government adopted for the state, the powers, duties and obligations of the governing body; and the rights, duties and obligations of the citizens. Among the most famous documents of this character are the "Magna Charter" of England and the more modern "Constitution of the United States." Such constitutional documents furnish the basis for the management of public affairs with respect to either foreign powers, or internal arrangements. They may be defined as the BASIC LAWS of the nations, and governments which have such basic laws are said to be CONSTITUTIONAL GOVERNMENTS.

Before the adoption of constitutional forms, the policy or "polity," of government depended primarily upon the interests of the ruling families or classes. Before the policies of such governments were inscribed, they were controlled simply by the whim of the ruler and his advisors. However, even under such autocratic government, there arose a practice of deciding questions relating to public affairs (questions of state), in accordance with decisions made in previous cases where the same or similar questions had been involved. This is the practice of following PRECEDENT, or TRADITION. It is a form of POLICY.

Policy not always completely inscribed. While the constitution of a state is an expression of the fundamental policy of its government, it would be impracticable to inscribe, in a single document, all that relates to the policies necessary for the management of the intricate public affairs of a modern state. In states having a representative form of government the policy with respect to any given public affair, is largely formed by PUBLIC OPINION. In such cases, whatever the powers with which the people have clothed their government, it is the acts and acquiescence of the people that constitute the true policy of the state, and the people themselves are equally responsible and culpable with their chosen representatives.

The Military Policy of the United States.

Historical origin. On July 4, 1776, the "United States of America," through their appointed representatives "in Congress assembled," adopted a declaration of their independence and affirmed that, as free and independent states, they had "full power to levy war, conclude peace, contract alliances, establish commerce, and to do all other acts and things which independent states may of right do." This act of the Congress was an expression of public opinion which was later confirmed in the ratification of the Constitution of the United States in which the people gave to their Congress powers to raise and support armies; to provide and maintain a navy; to provide for calling forth the militia to execute the laws of the union; to make all laws which shall be necessary for carrying into effect the foregoing powers, and declared that "a well-regulated militia being necessary to the security of a free state, the right of the people to keep and bear arms shall not be infringed." The people gave the Congress these very general powers, leaving it to Congress to establish the details of policy by which those powers were to be made effective, knowing that the right and the power to change their representatives was to remain in the hands of the people who were thus at all times to be in control of the military policy of the Government.

The policy of the English Colonies with respect to the conduct of their military affairs at the opening of the Revolution was an adaptation of the forms with which they were most familiar. Having at that time no intention of severing all connection with England and with the declared intention of laying down their arms when

hostilities should cease upon the part of the English Government, the Colonies did not feel the need for a standing army. They fell naturally into the practice of employing militia for home defense, an inheritance from their English connections. (The census of 1790 showed about 83 per cent English stock in the entire population of the United States.) So far as this practice applies to the MILITARY POLICY of the Colonies, it is a case of FOLLOWING PRECEDENT. The traditional military policy of the United States may be said to be of English origin.

How developed. In carrying out the general military policy, the Congress was guided by tradition and experience.

As early as the year 1774 several of the colonies began to make preparation for armed conflict with Great Britain. The Massachusetts troops were organized by giving a captain's commission to anyone who could enroll a company of 59 men, and the commission of a colonel to anyone who could get together ten such companies. This system, under which ability to raise men is made the sole qualification for command, deserves particular attention, since it has come down to recent times and has been employed, with the exception of the war with Germany, at the beginning of all of our wars. On this subject Washington wrote to the President of Congress, September 24, 1776, "while the only merit an officer possesses is his ability to raise men, while those men consider and treat him as an equal and in the character of an officer regard him no more than a broomstick, being mixed together as one common herd, no order or discipline can prevail, nor will the officer ever meet with the respect which is essentially necessary to due subordination."

Immediately after the battle of Lexington, militia and minute men from all over the New England colonies, individually, by company, and by regiment, began to assemble near Boston, and these half-organized troops, which only by courtesy recognized a commander, fought, on the 17th of June, 1775, the battle of Bunker Hill.

"Without pausing to discover the secret of the defense of Bunker Hill, the mistaken conviction seized the public mind that the militia were invincible and that patriotism was the sole qualification for a soldier's calling—a fallacy which paralyzed the military legislation of the Revolution by inducing the political leaders of the time to rely too confidentially upon raw and undisciplined levies."

The student is referred to the accompanying table, page 15, for detailed information as to the relative costs of American wars; the total number of individuals called into the military service in each war as compared with the greatest strength of the enemy forces in each instance; the duration of the wars and the losses in human life through battle deaths and death from wounds. The figures given are compiled from state papers, Upton's "Military Policy of the United States," War Department and Treasury Department estimates and the "World's Almanac."

This table shows that 396,958 Americans were called out for military service to oppose 42,075 British troops during the Revolution. It does not show the additional fact that when Lord Howe landed on Long Island, 1776, the total British forces numbered 20,121 and that the British strength constantly increased during the war until it reached 42,075, while that of the Americans dwindled from 89,600 in the year 1776, to 29,340 in 1781.

Origin of the Regular Army. Soon after the troops began to assemble in the neighborhood of Boston it became evident that the contest would extend beyond New England, and that to prevent the dissolution of the force already gathered together it must be adopted as a Continental Army. Accordingly, June 14, 1775, the Second Continental Congress resolved to take the troops at Boston into the pay of the United Colonies. This force of Regular Troops was to consist of 10 companies of riflemen, enlisted to serve for one year. "So great was the popular enthusiasm that within 60 days after the passage of the resolution, 12 companies of riflemen reported at the camp at Boston, several of them having marched a distance of 800 miles. These riflemen, the first troops under continental authority (all previous forces being militia raised by the separate colonies) were the nucleus of the army which finally achieved our independence."

Washington was appointed commander-in-chief on the day following the resolution creating the Regular Army. In the selection and arrangement of the officers for the new regiments he was seriously hampered by jealousies among the states and petty rivalry among those who had given in their names to serve as officers. The recruiting of the men gave Washington even more trouble than the arrangement of the officers. On December 15, 1775, he wrote: "Our enlistment goes on slowly. By the returns last Monday only 5917 men are engaged for the ensuing campaign, and yet we are told that we shall get the number wanted (20,370), as they are only playing off to see what advantages are to be made, and whereby a bounty can be extorted, either from the public at large or individuals in the case of a draft."

"The sequel will show that bounties were paid throughout the Revolution, and as was the case throughout the War of the Rebellion, were at all times potent factors of evil and discontent."

During the Revolution an intense feeling of opposition to a standing army almost wrought the ruin of our cause. Since then this feeling has been diligently kept up and has formulated itself into the maxim that "a standing army is dangerous to liberty." Without considering the difference between hirelings of a despot and an army of citizens created by the representatives of a free people, it has been and still is the policy of our Government to maintain an inexpensive military establishment and upon the smallest possible basis. To such an extent has this been carried that our Regular Army has not been able to meet even the ordinary exigencies of times of peace. On the 3rd of November, 1781, the army was disbanded, with the exception of one regiment of infantry and two batteries of artillery. The finances of the nation being completely exhausted, Congress, on June 2, 1784, ordered the discharge of all troops then in the service of the United States, excepting 80 privates with a proportionate number of officers, of whom none were to be above the rank of captain. This force was retained to guard military stores and arsenals at Fort Pitt and West Point. This order disbanded all that was left of the Continental Army, and was equivalent to a declaration that our infant republic would begin its career by entirely dispensing with a regular army. On the following day, wholly ignoring the disasters occasioned by the employment of raw levies during the Revolution, Congress called upon the states to furnish from their militia 700 men to be immediately used for securing and protecting the northwest frontiers of the United States. But it did not take long to convince Congress that a certain number of regular troops was indispensable. On the 1st of April, 1785, it resolved: "That it is necessary that a body of troops consisting of 700 non-commissioned officers and privates be raised for the term of three years, unless sooner discharged, for the protection in the northwestern frontiers, to defend the settlers on the land belonging to the United States from the depredations of the Indians and to prevent unwarrantable intrusion thereon, and for guarding the public stores." This legislation at least had the virtue of recognizing the necessity for enlistment periods of sufficient duration to enable the Government to get some return in the form of service from their soldiers after they had been properly disciplined and trained.

At the opening of the War of 1812, the paper strength of the Regular Army of the United States was 35,000 men, its actual strength was 6744 and the enemy's regular troops in Canada did not number 4500. Powerless to take advantage of the enemy's weakness, military legislation had to take the place of military action.

The wisdom of the Constitution in giving Congress the sole power to raise and support armies, was demonstrated at the beginning of this war by the refusal of the Governors of Massachusetts and Connecticut to furnish their quotas of the 100,000 militia, which were called for by Congress on April 10, 1812, to relieve the regular troops in the seacoast defenses, so that these might be sent to the northern frontier to take part in an invasion of Canada. Under our particular form of government and in a country of such vast extent, the possible lukewarmness of one or more of the states, makes it the more important that the whole war power of the nation should be wielded exclusively by the direct representatives of the states and of the people, in Congress assembled.

No better example can be given of the mismanagement of this war than the measures adopted by the President and his cabinet for the defense of the capital in 1814.

"Although the British fleet, with about 3000 troops on board, had been hovering along the shores of the Chesapeake for nearly a year, it was not until June, 1814, that the attention of the administration was turned to the danger that confronted the capital. It was then found by the Secretary of War that the regular troops in the Fifth Military District, embracing the States of Maryland and Virginia, numbered but 2208 men. These troops, composed to a large extent of recruits, were dispersed at various points along the Chesapeake from Baltimore to Norfolk, and were therefore incapable of speedy concentration. June 7, the President presented this state of affairs to the Cabinet, but it neither suggested any action nor excited any alarm. The downfall of Napoleon having made it possible for Great Britain to reinforce her troops in America, the President convened the Cabinet on the 1st of July, and submitted the proposition to call out 2000 or 3000 militia to be stationed near the capital; while from 10,000 to 12,000 troops from Maryland, Virginia and the District of Columbia were to be held in readiness to march at a moment's notice. A new military district was then created comprising territory adjacent to Washington, and the command of this district was devolved upon General Winder, whose selection according to the statement of the Secretary of War, was based "not on the ground of distinguished professional service or knowledge," but simply on the presumption that, "being a native of Maryland and a relative of the governor, Brigadier Winder would be useful in mitigating the opposition to the war, and giving increased efficiency to national measures within the limits of the state." By dint of repeated calls upon the adjacent states and even upon the interior states a force was finally assembled. On the 24th of August the army, described by its commander as "suddenly assembled without organization, discipline, or officers of the least knowledge of the service" numbered 5401 of whom 400 were regulars, 600 marines and 20 sailors, the remainder being volunteers and militia. The same day the army thus hastily assembled was as hastily formed in order of battle at Bladensburg, where in the presence of the President and the Cabinet, it was attacked and routed with the loss of but 8 killed and 11 wounded. Wherever the news of the capture of Washington was received it justly excited the indignation of all parties. The people had given to their representatives, before and during the war, unlimited powers to raise and support armies; the trust had been abused; the honor of the nation had been wounded. Unable to trace the real cause of the calamity to defects of organization, the people satisfied themselves with laying the blame on the Secretary of War, who was compelled in disgrace, to retire from the Cabinet."

"Our military policy or, as many would affirm, our want of it, has now been tested during more than a century and a quarter. It has been tried in foreign, domestic and Indian wars, and while military men, from painful experience are united in its defects and dangers, our final success in each conflict, success frequently made possible by contributing cause beyond our control, has so blinded the popular mind as to induce the belief that as a nation we are invincible, and as all of these wars were largely begun by militia and volunteers, the conviction has been produced among many of our countrymen, that a regular army is not an absolute necessity."

"In relating the events of these wars the historian has generally limited himself to describing the battles that have been fought, without seeking to investigate the delays and disasters by which they have been prolonged, till, in nearly every instance, the national resources have been exhausted."

Military Resource.

"With the greater mass of people, who have neither the time nor the inclination to study the requirements of military science, no error is more common than to mistake military resources for military strength, and particularly has this been the case with ourselves. Military resource is one thing and military strength, another. In every civilized country success in war depends upon the organization and applica-

tion of its military resources. The resources themselves consist of men, materials and money. For military resistance the strength of a government is the power it can wield on the field of battle. In the War of 1812, the strength of the American Government, at the battle of Bladensburg, was measured by 6000 militia; at the Battle of Bull Run, in 1861, it was measured by 35,000 of the same kind of troops. In one case the national capital fell into the hands of the enemy, while in the other 20,000 regular troops might have settled the question of military resistance and relieved us from the pain and suspense of four years of war.

Table Showing Cost, etc., American Wars.

Wars	Duration (years)	Cost per capita of population	Aggregates of men called out for military service			Killed or died of wounds	Strength of enemy forces
			Regulars	Militia and volunteer	Total		
Revolution.....	7.0	\$123.00	231,771	164,087	396,958	39,287	42,075
War of 1812.....	2.6	2.00	85,000	471,662	576,622	4,955	16,500
Florida war.....	7.0	2.00	11,169	29,963	41,122	1,466*	5,000†
Mexican war.....	2.2	3.75	42,587	73,532	116,119	2,731	25,000†
Civil war.....	4.0	96.00	62,000	2,710,408	2,772,408	110,070	1,300,000
Spanish-American and Philippine in- surrection.	4.0	7.50	57,329	233,252	290,581	1,383	\$
World war.....	1.6	247.00	527,000	3,473,000‡	4,000,000	48,909	\$

* In regular army only.

‡ Composed of 382,000 militia and 3,091,000 drafted men.

† Estimated, probably too large.

§ No reliable figures available.

Comments. The per capita cost given for the Revolution includes an item of \$200,000,000.00 of currency, for the redemption of which the faith of the Continental Congress and the Confederation was twice solemnly pledged.

Two factors which greatly contributed to the high per capita cost of the World War were: 1st, The character and scale of the military operations; and, 2nd, the decreased purchasing power of the dollar. It is believed that a 3rd factor will be found in the "cost plus 10 per cent" plan adopted by the Government in the payment of contracts for war materials, etc.

Questions.

1. What is the significance of the term policy with respect to the conduct of governmental affairs?

2. Name a famous policy of American Government with respect to Latin America.

3. How many "constitutional governments" can you name?

4. What do you consider is the most potential influence in the formation of the governmental policies of the United States? What reasons have you for your opinion?

5. In general, what is the origin of the military policy of the United States Government?

6. What was Washington's opinion of the policy of awarding military rank and command to citizens who "raised" men to serve in the army? Do you agree with him?

7. How did the "standing" or "Regular" Army originate in the United States? Do you consider that a Regular Army is necessary to our form of government? What are your reasons for your opinion on the last question?

8. To what particular influence do you ascribe the defeat of the American Army at the battle of Bladensburg and the consequent capture of our national capital by the British?

9. In your opinion what is the true lesson to be learned from the battle of Bunker Hill?

10. Explain the difference between "military resources" and "military strength."

FOURTH LESSON.

MILITARY POLICY AS EXEMPLIFIED IN THE AMERICAN REVOLUTION.

A glance at the table showing "Costs, etc., of American Wars" (page 15) is enough to raise several significant questions about the military conduct of the Revolutionary War.

How did it come about that the American colonies raised nearly 400,000 men to defeat an enemy who engaged in battle only 42,075 men? Why with such a small number of the enemy on American soil did it take nearly seven years to end the war?

Much of the information necessary to answer these questions was furnished in the last lesson. The situation is thus summed up by Washington in a letter written to the President of Congress in 1780:

"Had we formed a permanent army in the beginning, which by the continuance of the same men in service, had been capable of discipline, we never should have had to retreat with a handful of men across the Delaware in 1776, trembling for the fate of America, which nothing but the infatuation of the enemy could have saved; we should not have remained all the succeeding winter at their mercy, with sometimes scarcely a sufficient body of men to mount the ordinary guards, liable at every moment to be dissipated, if they had only thought proper to march against us; we should not have been under the necessity of fighting Brandywine, with an unequal number of raw troops, and afterwards of seeing Philadelphia fall a prey to a victorious army; we should not have been at Valley Forge with less than half the force of the enemy, destitute of everything, in a situation neither to resist nor to retire; we should not have seen New York left with a handful of men, yet an overmatch for the main army of these states, while the principal part of their force was detached for the reduction of two of them; we should not find ourselves this spring so weak as to be insulted by 5000 men, unable to protect our baggage and magazines, their security depending on a good countenance and a want of enterprise in the enemy; we should not have been the greatest part of the war inferior to the enemy, indebted for our safety to their inactivity, enduring frequently the mortification of seeing opportunities to ruin them pass unimproved for the want of a force, which the country was completely able to afford, and of seeing the country ravaged, our towns burnt, the inhabitants plundered, abused, murdered, with impunity from the same cause.

"Nor have the ill effects been confined to the military line. A great part of the embarrassments in the civil departments flow from the same source. The derangement of our finances is essentially to be ascribed to it. The expenses of the war and the paper emissions have been greatly multiplied by it. We have had a great part of the time two sets of men to feed and pay—the discharged men going home and the levies coming in. This was more remarkably the case in 1775 and 1776. The difficulty and cost of engaging men have increased at every successive attempt, till among the present line we find there are some who have received \$150 in specie for five months' service, while our officers are reduced to the disagreeable necessity of performing the duties of drill sergeant to them, with the mortifying reflection annexed to the business, that by the time that they have taught these men the rudiments of a soldier's duty their services will have expired and the work recommenced with a new set. The consumption of provisions, arms, accouterments and stores of every kind has been double in spite of every precaution I could use, not only from the cause just mentioned, but from the carelessness and licentiousness incident to militia and irregular troops. Our discipline also has been much hurt, if not ruined by such constant changes. The frequent calls upon the militia have interrupted the cultivation of the land, and of course have lessened the quantity of its produce, occasioned a scarcity and enhanced the prices. In an army so unstable as ours, order and economy have been impossible. No person who has been a close observer of our affairs can doubt that our currency has depreciated without comparison more rapidly from the system of short enlistments than it would have done otherwise.

"There is every reason to believe that the war has been prolonged on this account. Our opposition being less, the successes of the enemy have been greater. The fluctuation of the army kept alive their hopes . . . Had we kept a permanent army on foot the enemy could have had nothing to hope for, and in all probability would have listened to terms long since."

"The main causes of our weakness during the Revolution cannot be appreciated unless we consider the constitution and powers of the Continental Congress. The First Continental Congress assembled at Philadelphia in 1774 for the purpose of taking counsel in regard to the common interests of the colonies. War at this time not being seriously apprehended, the chief steps taken were to make a "declaration of colonial rights" and to adopt "articles of association" looking to commercial non-intercourse with Great Britain. Before adjournment provision was made for another Congress to meet on the 10th of May, 1775.

"The battle of Lexington, which took place three weeks before the meeting of the Second Continental Congress, forced that body to exercise immediately the functions of civil government. It accordingly assumed both legislative and executive powers; but having no authority to levy taxes or raise a revenue, was compelled to emit bills of credit, their redemption being pledged by the 12 "United Colonies."

"The power to create and support armies was thus almost neutralized by a financial system which had no other basis than the faith of the public in the ultimate success of the American cause."

"The story of the Revolution would have been very different had local interests and prejudices been set aside and had the Continental Congress been clothed with sovereign authority to call forth and utilize the entire military and financial resources of the people."

"We need not detail the reasons which induced the Colonies to withhold from their representatives in Congress the powers indispensable to the rigorous prosecution of war. It will be enough to show that the feeble and exhaustive military policy pursued finally reduced Congress to the helpless condition of an advisory body, without power to raise or support a single soldier, except with the aid and concurrence of the states."

"Another great defect of the system of government was the combination of legislative and executive power in one deliberative assembly. In time of emergency it was as often swayed by the passions and prejudices of its members as by their wisdom and prudence. The executive power, which was exercised in the form of "resolves," continually tempted Congress to interfere at critical moments in the management of campaigns. Whether this undoubted right was exercised in ordering troops from one army to another, in the appointment or promotion of an officer, or in his removal from command, each executive act was sure to be criticized as freely by the public and the army as if it had been the act of an individual."

"With no executive head to assume the blame that would now be laid at the door of the President and his Cabinet, it was natural that reflections upon the administrative capacity of Congress should be resented at times by hasty and passionate legislation, and in proportion as that body found its conduct arraigned it felt less inclined to listen to its critics or to profit by their advice."

"Military legislation was thus made to depend upon the combined wisdom of a body of citizens who, in their individual experience, were totally ignorant of military affairs."

"Fear of a standing army and corresponding jealousy of military dictation, were added reasons for making the Continental Congress rely upon its own judgment in legislation pertaining to army matters."

"Appreciating this, Washington, in his correspondence, repeatedly apologized for intruding his opinions when, had he remained silent, the decisions of Congress might have proved fatal to the cause. As the central figure of the Revolution there was not a single mistake in our military policy that he was not called upon to confront. No apology need therefore be offered for the numerous quotations from his

letters, which are at this day as well worthy of legislative consideration as they were when first written."

When we read the pages of our so-called "popular histories" we are filled with the most pleasing sentiments with regard to the heroic patriotism of the people whose sacrifices secured for us the cherished institutions of freedom. The word freedom is written large across our horizon. We read on and we are inspired by the thought of that mass of people rising in their just indignation and shaking off the fetters of autocracy. We read the records of our triumphs in the Revolution, in the War of 1812, in the Florida War, in the Mexican War, in the Civil War, and in the war with Spain, and as all of these wars were begun by militia and volunteers, the conviction grows upon us that with us a regular army is not necessary. This fallacy is a part of that web of deception with which the American people have for so long loved to blind their vision from the cold light of fact.

In 1774, when Congress resolved to take troops at Boston into the pay of the United Colonies and to form a body of troops that would be available for military operations in any part of the country, two things happened: 1st, Congress then and there created a regular army in defiance of its traditional Anglo-Saxon maxim that "standing armies are dangerous to liberty," and, it then and there did the one thing that more than all others combined, ultimately secured that very liberty to which standing armies were said to be such a "menace." Having taken one bold step in the right direction Congress faltered, and there followed seven years of war.

The immediate effect of the creation of the Regular Army was an enthusiastic response from the people. More men came to the American camp at Boston than were necessary to fill the numbers authorized, some of them marching a distance of 800 miles to join this new army of liberty. Had Congress then said "we will have one good army, in which all citizens shall serve in turn as needed, and in which the officers shall be appointed by the commander-in-chief with the advice and consent of Congress"; there can be no doubt that the national resources would have been conserved, the period of the war with all of its attending evils shortened, and the liberty of the nation secured at the least possible cost.

It was in June, 1775, that Congress passed the resolution creating the Regular Army and in the next breath, in July of the same year, our national legislature, recognizing the necessity of having a body of men to reinforce the Regular Army in times of emergency, recommended "to the inhabitants of the United English Colonies that all able-bodied, effective men, between 16 and 50 years of age, be formed into companies of militia" and at the same time Congress recommended the way in which these companies were to be organized and that the officers of each company were to be chosen by the respective companies while all officers above the rank of captain were to be appointed by the provisional assemblies or what would correspond to our present state legislatures. This body of militia could only be called out with the consent of the state legislatures and were specially intended for home defense.

The effect of this piece of legislation is at once apparent to the student. With one stroke of its pen Congress tied up, so to speak, the military man power resource of the young nation into 12 packages and delivered to each colony the one labeled with its own name. Thereafter, in order to get men for the Regular Army, the military force upon which the destinies of the United States were to depend; it was necessary for Congress to go as a suppliant to the states.

Another equally apparent evil of this military system was the option it offered to men to avoid active military service with the only real military force the country had, by enlisting in one of the militia companies. "The slow increase of the Regular Army shows that Congress was committed to a dual military establishment, one class of troops being regular, the other militia. In the former the gradual extension of enlistments to two and three years enabled the men to acquire the discipline which ultimately proved the salvation of our cause. The natural inclination of men to seek the easiest and shortest service prompted them to enlist in the militia in preference to the regular regiments and thus the only force which could be depended upon to cope with the British, both offensively and defensively, was always from one-third

to one-half below its prescribed strength. It may be laid down as an axiom, based upon historical proof, that a government which foregoes its right to compulsory military service becomes more and more enslaved by depending solely upon voluntary military service induced by gifts of money, land and clothing."

Twice during the Revolution Congress was impelled to vest Washington with dictatorial powers, and, finally, the system of voluntary enlistments even when stimulated by large bounties having failed to raise the men required, Congress was forced to recommend the draft. The manner in which the states responded to this measure is best portrayed in the words of Washington himself, who, on March 17, 1778, wrote to the president of one of the state councils as follows:

"It gives me inexpressable concern to have repeated information from the best authority that the committees of the different towns and districts in your state hire deserters from General Burgoyne's army and employ them as substitutes to excuse the personal service of the inhabitants. I need not enlarge upon the dangers of substituting as soldiers, men who have given a glaring proof of a treacherous disposition and who are bound to us by no motive of attachment, instead of citizens in whom the ties of country, kindred and sometimes property are so many securities for their fidelity."

Such lack of appreciation in a people who were fighting for their independence, of the importance of furnishing good men to the army, is hard to understand, but it becomes incomprehensible when we consider that each of the British deserters thus enlisted was to be the recipient of a bounty, if not from the state, then from the citizen whose place he was to take in the American Army.

The bounty system was a child of the Revolution, called into being when the colonies denied Congress the power of compelling enlistments. It grew steadily during the long struggle for independence, only to reach its full maturity in our Civil War. One instance which will give an idea of the extent to which this practice was carried on during the Revolution is that related of the State of New Jersey, where, in 1780, the large sum of \$1000 in excess of all Continental allowances and bounties was reached. This was in part due to the enormous depreciation of the currency and offers a very interesting comparison with the fiscal conditions of our own day.

What is more important for us to realize is that through the lack of a uniform military policy whereby the man-power resources of the nation could be used as needed, and only to the extent needed, our Government was forced into the adoption of expedients which resulted in the expenditure of money and the employment of numbers of men entirely out of proportion to the strength of the British forces to which they were opposed. An examination of the figures shows that in 1776 when the aggregate number of our troops reached 89,600 the British had but 20,121 and that from that time our number steadily dwindled down to 29,340 in 1781 while the British strength constantly increased till it reached 42,075. What is more significant than the fact that during the Revolution our Government called into the military service of the United States some 400,000 individual men to cope with an enemy whose strength at no time reached the comparatively small number of 43,000? We believe that this is evidence of the truth of the assertion made in our second lecture, that "our history is full of the success of the volunteer soldier after he has been trained for war, but it contains no record of the successful employment of raw levies for general military purposes."

Again, with the experience of the Revolution in mind, we can easily appreciate the wisdom of Washington's advice "in time of peace prepare for war." We can understand that these words were not uttered in anything like what would to-day be called a "militaristic" spirit, but they were the expression of our most eminent citizen-patriot who always gave his best to the service of his countrymen and who has left for all true Americans a simple statement of unexcelled patriotism in these words:

"The principle by which my conduct has been actuated through life would not suffer me in any great emergency to withhold any service I could render, required by my country."

FIFTH LESSON.

SIGNIFICANT BATTLES OF THE AMERICAN REVOLUTION.

(Based on "American Campaigns," Steele.)

In the previous lessons sufficient information has been furnished the student to enable him to form a conception of what is meant by military *resource*, military *strength*, and military *policy*.

From the historical data given and from the transcript from Washington's criticism of the military policy of our Government during the revolutionary period, we will now turn to the accounts of the military activities which culminated in victory for the Americans and their French allies with the surrender of Cornwallis at Yorktown in 1781 after seven years of conflict.

It is not the purpose of this lesson to give a chronological account of campaigns, but rather to describe certain battles which have a significant relation to our military policy, or our want of it.

The instances chosen are those which illustrate as clearly as any :

The need for legislation based upon military requirements.

The need for trained officers to lead the troops.

The danger of trusting military command to generals who owe their appointment to political preferment and not to skill.

The need for training of our citizens to enable them to perform the duties of the soldier in times of war and the fallacy of hoping to successfully meet trained troops with untrained levies.

The fact that our ultimate success in the American Revolution was in a great measure due to the sympathetic feeling of the Whig Party in England, which gave courage to the American revolutionists and restrained certain British generals from taking more active measures to crush the patriot army, and, finally, that the winning of our independence was due more to foreign aid that came to us at a critical time from the enemies of Great Britain in Europe, than to the wisdom of the American people in their conduct of military affairs.

A brief statement of some general considerations is first necessary in order that the details which follow may have clearer meaning.

Geography. It is seen from the map (Plate 1) that the 13 original colonies occupied a comparatively narrow strip of the Atlantic coast, 1000 miles long. There were about 15 good harbors. All the important towns were on the sea shore, or on large waterways not far inland. The Hudson River, and the Chesapeake Bay with its tributary, the Susquehanna River, divided the country into three parts. If these waters could be held and guarded by the British, the rebellion would be split in three pieces. There were few roads in the country and those few were poor and lay close to the sea, or in the river valleys.

Plan of the British. The general plan which the British Ministry proposed but never could carry out was as follows: "To occupy such portion of the territory as would effectually break up the union of the patriots and to prevent intercourse among them; to blockade the coast and prevent supplies from entering by the sea; to destroy any organized armies the colonists might form; and then to suppress by degrees the guerrilla warfare into which an unsuccessful insurrection generally degenerates."

The American plan. The plan of the Americans was the simple defensive—"to oppose the British as best they could at every point and to hold fast the line of the Hudson."

The Political Situation.

The political party in England known as the Whigs was opposed to the war; its members did as much as they could by their speeches and writings to encourage the American patriots; the relations of England and France were strained.



PLATE I.—From the True History of the American Revolution by Sydney George Fisher.

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Military Operations.

The Revolutionary War opened with the Battle of Lexington on the 19th of April, 1775. General Gage, the British commander at Boston, had sent out 800 soldiers in the night to seize a lot of supplies the colonists had collected at Concord. You all know the upshot of it. The British regulars retreated to Boston. Then the patriotic farmers shouldered their fowling pieces or muskets and flocked to Boston, and soon General Gage's little garrison of British regulars was besieged by a motley collection of rebels. In May, 1775, General Sir William Howe arrived at Boston with reinforcements, which raised General Gage's army to 10,000.

The Battle of Bunker Hill and siege of Boston. On looking over to Breed's Hill on the morning of June 17, 1775, General Gage saw that it was occupied by a rebel force. Behind the breastworks were Prescott, Israel Putnam and John Stark, and about 1500 Americans. Gage sent General Howe with about 2500 red-coats *to make the usual frontal attack*, instead of shutting the rebels up, by putting troops on the neck of lane connecting the peninsula upon which Breed's Hill stood with the mainland. Howe knew better, but he obeyed the orders of his commander. After several desperate assaults by the British the Americans were driven out for lack of ammunition. The British lost 1059 men. This was the Battle of Bunker Hill. What shall we say is the true lesson to be drawn from this remarkable encounter?

After the Battle of Bunker Hill the British returned to their quarters in Boston, and the Americans to their lines around the town. (Plate 2.) Here Washington, by appointment of the Continental Congress, took command of the American forces on July 2, 1775.

It was like many another rebel force—a force without uniforms, without tents, without supplies, without discipline.

Washington's task was to turn it into an army and the only requisite he was to have was time. Of time there was plenty, *for no fighting took place within the northern colonies until the Battle of Long Island, August 27, 1776, more than a year later.*

Let us return to the events around Boston which was the center of greatest interest during the first year of the war.

In the summer of 1775 the Continental Congress, sitting at Philadelphia, passed a resolution raising eight companies of riflemen in Pennsylvania, two in Maryland and two in Virginia which were added to Washington's army at Cambridge. These troops became the nucleus of the American Regular Army. The rifles with which they were armed were supposed to be able to kill at 300 yards, while the muskets of the British were hardly dangerous at 100 paces.

Washington's army never numbered this year more than 16,000 men, and as its soldiers came and went about as they pleased, it fell to some 10,000 by the winter of 1775-76; and there were weeks at a time when it had no powder except what was carried in the powder horns of the men.

Thus, we see, that while a portion of the American troops were better armed, in the matter of rifles, than were the British, yet in discipline and essential supplies it was shockingly deficient, and the *military strength* of the Colonies, such as it was, was rendered inert. The leaders of the troops could not risk the chances of a decision in the open field and a complacent enemy was content to enjoy the pleasures and security of Boston while the first ardor of the patriot army was cooling upon the hills above the town.

At length Washington got a few cannon, and on the night of March 4, 1776, posted them on Dorchester Heights; a few nights later he pushed them forward to Nook's Hill. (Plate 2.) Thereupon, General Howe, who had succeeded Gage, evacuated Boston and sailed with his army to Halifax. And strangest of all, he left there to be seized by the rebels, *"more than 200 cannon, tons of powder and lead, thousands of muskets and all sorts of miscellaneous stores."* It was not until March 17 that he sailed—12 days after Washington had seized the heights. He certainly had time to destroy those arms and supplies.



PLATE 2.—From General Carrington's Battle Maps and Charts of the American Revolution,
A. S. Barnes & Co., Publishers.

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Why did Howe go to Halifax? Five months before he had declined the order of the British Ministry to take his army to Long Island, where it would have been among royalists, and easily supplied, on the ground that he had not enough shipping.

Why did Howe, with 10,000 British regulars, lie in Boston from June, 1775, to March 17, 1776, without striking a blow at the undisciplined, unequipped, American troops gathering at Cambridge?

Answers to these questions must be sought in contemporary English history.

The British Government now redoubled its efforts. It had a plan for the reduction of the colonists, the plan we have already stated.

Battles of Long Island and Harlem Heights. After the withdrawal of Howe's army from Boston, Washington transferred the bulk of his force, only about 8000 men, to New York City and its vicinity, which it was believed would be Howe's next objective. This proved to be the case.

Washington was unable to oppose any resistance to the landing of the British and by June 28, 1776, General Howe had landed his army on Staten Island. (Plate 3.) He had about 30,000 troops supported by a powerful fleet. Washington, whose army numbered about 18,000 men, knew very well that he could not hold New York, and he should have withdrawn at once. But the Continental Congress would not hear of his withdrawal. The city was commanded by Brooklyn Heights and the only chance that Washington had for holding it was to put his whole force on Brooklyn Heights. But he divided it, keeping part in New York, and placing part in Brooklyn under General Putnam.

On August 22 Howe took 15,000 or 20,000 troops and 40 guns over from Staten Island, landed on Long Island, and, after reconnoitering for four days, made a skillful turning movement against Putnam and routed him. (Plate 3.)

Howe made no effort to push his victory, and Washington succeeded in withdrawing his force back to the New York side of East River.

Instead of following up his advantage Howe remained on Long Island more than two weeks. Then he crossed his army over, landed it about where 33rd Street now is and drove away the militia posted there "in headlong flight."

Washington withdrew his army to the north end of the island and took up a position on Harlem Heights. Howe took possession of the city of New York. On the 16th of September he made a *frontal attack* upon Washington's position at Harlem Heights and was repulsed. (Plate 3.)

The battle of Long Island resulted in a loss to the American Army of about 1000 men, one-half of whom were taken prisoners. Washington was in the vicinity of New York, with an American Army of about 18,000 men for nearly a third of a year, without being able to do the enemy any damage. Almost one and one-third years had elapsed since the battle of Lexington during which time the Americans had fought three battles, Bunker Hill, Long Island and Harlem Heights, and what had they gained? Were the American men not a match in bravery, to the British soldiers and their hired German troops? Why had not Washington attacked General Howe at Boston, and why was Putnam at Brooklyn Heights, beaten and driven out of his well-chosen and intrenched position? There is a similarity between the tactics employed by the British at the Battle of Bunker Hill and the battle of Harlem Heights, but the tactics used by the British at the battle of Brooklyn Heights were very different. What conclusion do you draw as to the value of undisciplined troops under these two different conditions?

Again, what influence caused Washington to remain in the vicinity of New York against his better judgment, when Howe landed at Staten Island?

Burgoyne's surrender. Aid from Europe. The plans of the British Ministry for their campaign in 1777 contemplated a concerted movement of three columns of troops, for the purpose of getting possession of the Hudson River Valley. (Plate 1.) If successful this plan would cut off the New England colonies and weaken the strength and resisting power of the American Confederation.



PLATE 3.—From the American Revolution by John Fiske.

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It was a good plan but failed because the Americans caught one of the three columns of British troops which was commanded by General Burgoyne and defeated it before it could join forces with either of the other two.

Burgoyne had started out from Canada in June, 1777, with about 8000 men. In his attempt to retreat from a difficult position he had got into, he was cut off and surrounded by the American forces numbering more than 20,000, under the command of General Gates. Burgoyne surrendered at Saratoga in New York State on the 17th of October.

After the surrender of Burgoyne there transpired two events which proved to be of vital consequence in the winning of the American cause. France formed an alliance with the United States and Frederick the Great of Prussia, showed his friendliness by prohibiting any more Hessian troops from entering the military service of Great Britain.

These events operated to give the patriots renewed hope and to weaken the hand of the British Ministry, but greater still was the aid supplied by French arms in the successful termination of the struggle for independence.

A French fleet and a force of 4000 French soldiers arrived off New York in June, 1778.

A plan was formed to attack the British troops under General Clinton, in New York, but some of the French ships were of too deep draft to pass over the bar at the mouth of the Hudson River, and the project had to be abandoned.

The French sailed away to the West Indies, to threaten the British possessions there, and immediately 5000 of Clinton's men had to be withdrawn from the continent and sent to those islands.

The subsequent part performed by our French Allies at the siege of Yorktown needs no comment.

Battle of Camden. Outside the immediate theater of operation, the Americans, up to the fourth year of the war, had suffered few of the discomforts incident to hostile military occupation.

It mattered not much materially to the people of Virginia and the Carolinas, or, even to the New Englanders, how many months the war kept up, so long as it was confined to New Jersey.

Clinton believed that the way to make a rebellious people want peace was to make the war uncomfortable for all of them. That was the purpose of the "wearing out" policy he now adopted.

In pursuance of his plan, Clinton sent a raiding force to the coast of New England, and another to Delaware Bay during 1778. (Plate 1.) "In the autumn, he sent Colonel Campbell, with 3500 regulars, to Georgia, where he easily defeated the 1200 militia of the patriots, and took Savannah and Augusta. At the same time the British General Prevost entered Georgia from Florida; so Georgia was declared out of revolt." (Fisher.)

"In the hope of checking the British progress in the South, General Lincoln was sent to Charleston." But the local militia could render him no assistance and he was able to obtain only 2000 militia from North Carolina by the end of February, 1779.

In September, 1779, Lincoln, with aid of the French fleet, laid siege to Savannah and assaulted it. He was repulsed with heavy loss. In December Clinton himself sailed from New York with 8000 men. He landed at Savannah, and getting some reinforcements from Prevost, marched against Charleston. Lincoln, who commanded Charleston, should have abandoned it and taken to the open country, but he collected all the troops he could and prepared to defend the town. There was very little fighting; Clinton laid siege and Lincoln surrendered the town, May 12, 1780, with 5500 prisoners and a great lot of ordnance and supplies.

Cornwallis was left by Clinton in command of South Carolina, and, "there was now, for a long time, a frightful scene of anarchy and confusion; with the British and loyalists plundering, murdering, and confiscating; the patriots retaliating as best they could." It was at this time, during the summer of 1780, that the patriots, who would not take the oath of allegiance, and had retreated to the swamps and mountains



PLATE 4.—From the True History of the American Revolution by Sydney George Fisher.

By special permission of the author and the publishers, J. B. Lippincott Co.

of the interior, maintained under Marion, Sumter, Pickens, and Williams, that partisan warfare which became so famous. Their attacking parties were as small as 20 and seldom over 100, but the suddenness of their appearance, the fury of their attack, and the swiftness and security of their flight were appalling to European troops." (Fisher.)

In June General Gates was appointed to take command of the patriot troops in the South. Upon arriving at Charlotte he found things in a deplorable condition; there was lack of arms, lack of everything, especially lack of funds.

Lord Rawdon was in command of the British garrison at Camden, which Gates decided to attack. Gates had the choice of two roads from Charlotte to Camden, one of which was a little longer than the other, but in every other respect better suited to the march. Against the advice of his officers, Gates took the shorter, apparently to reach his objective before it could be reinforced from Charleston.

Rawdon's command was much smaller than Gates' but he marched it out 15 miles to meet Gates, and posted it behind a creek blocking the way. At this point the two roads were about 10 miles apart. A skillful commander might have occupied Rawdon's attention in front, and made a turning movement by the other road; a bold commander might, with Gates' preponderance of numbers, have crossed the creek and carried the position by direct attack. Gates did neither; he wavered and hesitated for two days, then moved slowly across to the other road and took up a position at Claremont.

Meantime Cornwallis had arrived with reinforcements. The Americans, however, still outnumbered the British.. There were 3052 Americans, only 1400 of whom were regulars, to 2000 British. Gates, however, had not learned of the arrival of Cornwallis, and he detached 400 of his best Maryland regulars to join Sumter in cutting the British line of communications with Charleston.

At 10 o'clock at night the two little armies advanced toward each other, each hoping to take the other by surprise. The result was the battle of Camden, August 17, 1780, on a narrow piece of ground with an impassable swamp on each side. (Plate 4.) Gates' North Carolina and Virginia militia threw down their arms and fled without firing a shot. "Within 15 minutes," says Fiske, "the whole American left became a mob of struggling men, smitten with mortal panic, and huddling like sheep in their wild flight, while Tarleton's (British) cavalry gave chase and cut them down by scores." The Maryland brigade behaved better; but it also was driven from the field. General Gates himself escaped to Hillsboro, riding 200 miles in four days.

To enable the student to appreciate the full significance of the fiasco of Camden, it should be stated that the American commander at Camden was the same General Gates whom the Continental Congress had appointed to succeed General Schuyler in command shortly before the events which terminated in Burgoyne's defeat in October, 1777, and that General Gates had secured that appointment "by underhand scheming."

Two significant facts are before us. At the battles of Bunker Hill and Harlem Heights the American forces, composed partly of regulars and partly of militia, behind breastworks, had withstood the direct assaults of the British regulars in an entirely creditable manner. At the battle of Camden, fought at 10 o'clock at night, in which the American and British forces were both moving, a portion of the American militia fled without firing a shot, precipitating the defeat of the American Army with great slaughter. The inference to be drawn from these instances, as to the usefulness of untrained and undisciplined troops for general military purposes, is very clear. Military history is so full of identical evidence that we need not hesitate to state that that inference has become an accepted conclusion.

In contrast with the results obtained by the employment of raw troops at the battle of Camden, another affair took place in the same year which further illustrates the principle which should govern in the employment of untrained troops: This was the battle between the American troops under Morgan, about 1000 men, and the British forces under Tarleton, 1100 strong. Morgan had taken up a position at a

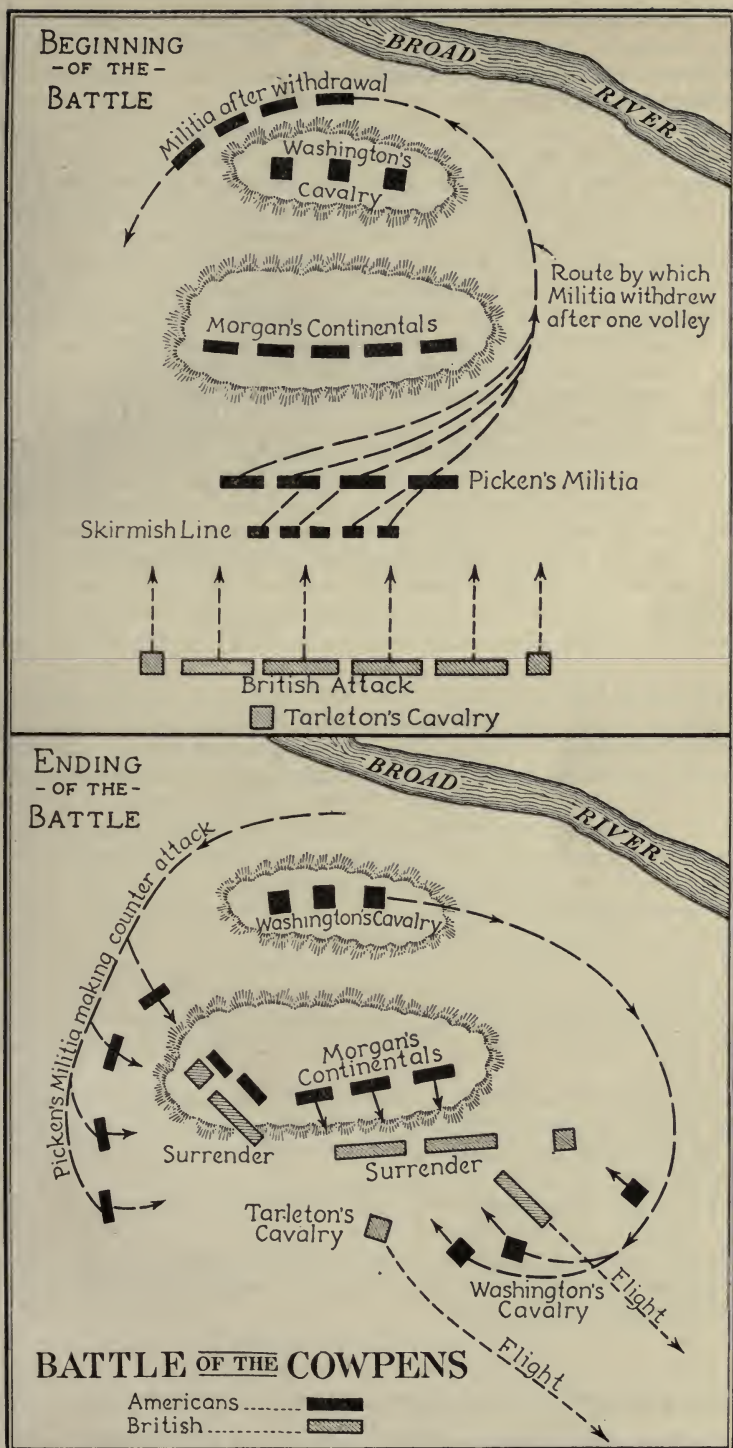


PLATE 5.—From the American Revolution by John Fiske.

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place called the Cowpens, a sort of "round-up" place for cattle. Here he was attacked by Tarleton. We will quote the description of the battle verbatim from Fisher's "True History of the American Revolution." Fiske's description is practically the same. (Plate 5.)

Morgan "placed himself with the river in his immediate rear, which, if he were defeated, would largely cut off his retreat; but he did this, he said, to prevent his militia running too soon. He then prepared a formation which seems to have been entirely original, the result of careful thought and thorough knowledge of his material.

"He placed the raw militia far in front to receive the first onset of the British and told them that he expected them to fire only two volleys at killing distance. After that they could run; and he showed them how to run around the left flank of the rest of his troops, and get behind the main body of them, where they could reform at their leisure and recover themselves.

"About 150 yards behind the militia, Morgan placed his picked troops on a slight hill; 150 further back he placed his cavalry, under Colonel Washington.

"Tarleton attacked, in his dashing, eager style, at sunrise. The militia received him better than was expected, and retreated as they had been told. The British immediately spread out and rushed at the second line of Americans, intending to flank them (envelop them) on both sides. The second line avoided this movement by falling back to the position of the cavalry. At the same time the cavalry circled round and attacked the British right flank; and the militia, having been reformed, circled round the other side and attacked the British left. The second (American) line retreated no farther, but, after delivering their fire at 30 yards, charged the British."

Tarleton escaped, but he lost 230 killed and wounded, and 600 prisoners. Morgan's loss was 12 killed and 61 wounded, while he captured two cannon and other spoils including muskets, horses and two standards. It is related that the cannon were originally captured from Burgoyne and were recaptured by the British at Camden.

The fall of 1781 witnessed the closing scene of the Revolutionary War. Washington, with a force of 16,000 men, composed of American regulars and French troops, laid siege in the regular way to Yorktown. On the night of the 15th of October the British made an unsuccessful attempt to break their way out of the besieged town; on the 17th—the fourth anniversary of Burgoyne's surrender—Cornwallis had a white flag raised.

On the 19th he surrendered and 7247 Englishmen marched out to the old tune of "The World Turned Upside Down," and laid down their arms. (Fiske.)

This practically ended the Revolutionary War, though the treaty of peace was not signed until 1783.

During the siege of Yorktown, a powerful French fleet guarded the Chesapeake Bay, where it was attacked by the British West Indies fleet. After a fight of two hours, in which about 700 men were killed and wounded in the two fleets, the British ships withdrew.

After all is said, what single influence did most to compass the surrender of Cornwallis' army?

Had this surrender not taken place, and had the "wearing-out" policy of Clinton gone on, the war might have lasted several years longer, and—who knows but what we might still be British subjects?

SIXTH LESSON.

MILITARY POLICY AS EXEMPLIFIED IN THE WAR OF 1812.

(Based upon "Military Policy of the United States" by Upton.)

In the last two lessons you have been given information which has enabled you to draw conclusions as to the lessons to be learned from the management of military affairs during the Revolutionary War. Before proceeding further it is desired to

point out a few of the lessons of that war, as they appear to the mind of a military man, briefly as follows:

First. That when a nation attempts to combat disciplined troops with raw levies, it must maintain an army of at least twice the size of that of the enemy, and even then has *no guarantee of success*.

Second. That troops become *reliable* only as they are *disciplined*; that *discipline is the fruit of long training*, and cannot be attained without the existence of a *good corps* of officers.

Third. That short enlistments are *destructive to discipline*, constantly *expose an army to disaster*, and inevitably *prolong war* with all its attendant dangers and expenses.

Fourth. That the three foregoing lessons are made more evident in proportion as the general government becomes dependent upon the states to raise troops, and the military strength of the whole people is correspondingly decreased and the national expenditures increased.

Post-Revolutionary Legislation.

The question now arises: To what extent did Congress and the people profit by these lessons?

At the conclusion of the Revolution the thoughts and energies of the people and the Government were naturally turned to repairing the damages of the recent conflict and to the settlement of many pressing domestic problems.

In a previous lesson we have seen that in 1784 Congress was compelled to disband the Regular Army and discharge all but 80 privates because the finances of the nation were completely exhausted and that, immediately thereafter, it was found necessary to raise a force of 700 men for the protection of the northwestern frontier and that this was accomplished *by calling upon the states to furnish quotas from their militia*. These men were enlisted to serve for 12 months, unless sooner discharged, and as their service expired at the end of *one year*, it again became necessary in 1785 to call for an equal number of men to replace them. "By this time Congress had become convinced that a certain number of regular troops was indispensable" and in calling forth the second lot of 700 men it very wisely took them into the service of the general government and enlisted them to serve for a period of three years. Which of the four lessons we have just mentioned as drawn from the Revolutionary War, did Congress apply when it reinstalled the Regular Army with a three-year enlistment period? Was this wise legislation? From the point of view of finances alone, what did the nation get from having 700 enlisted men to serve for three years that it did not already have in the 700 militiamen who were called out to serve for one year? You already have the information necessary to answer these questions.

One other piece of military legislation of this time is of particular interest for the emphatic illustration it gives of the public attitude toward the maintenance of an army and the powers and limitations of Congress. At this time the population of the United States was about 3,500,000 and upon the 20th of October, 1786, Congress voted to increase the recently reinstalled Regular Army to a total of 2040 men. The additional troops required were to be raised from six of the states and Congress *requested the states to "use their utmost effort to raise the quotas of troops assigned them with all possible expedition."* "but it appears that *only two companies* were raised out of the whole lot."

Adoption of the Constitution.

The next event of importance was the adoption of the Constitution of the United States.

"The weak, inefficient and chaotic administration of both civil and military affairs under the Confederation gradually brought about the conviction that some change was indispensable. In deference to public opinion, Congress recommended that a convention of delegates from the several states should revise and modify the

Articles of Confederation. In May, 1787, the convention met in Philadelphia, and after a session of four months submitted our existing Constitution, which was ratified by conventions specially chosen by the people of each state, and became within a year the supreme and organic law of the land."

New War Powers and Fixed Responsibilities.

We have only to compare the war powers of Congress under the Confederation and under the Constitution to perceive that the ratification of the last-named instrument meant a radical change in our form of government. Acts of Congress having the effect and force of law now took the place of resolutions which amounted to but little more than recommendations and appeals to the states. The young nation now had a government clothed with all the war powers that the most despotic ruler could ask. Henceforth there could be no *division of responsibility* between the general government and the states. If disasters should happen in the future like those which twice forced the Constitutional Congress to hand over its authority to a military commander; if raw levies hereafter should be swept away as they were at Long Island and at Camden, and large portions of our territory given over to the ravages of war; if vast armies and prodigal states should again deplete the national treasury, the whole responsibility must lie at the doors of a *President and a Congress* clothed with unlimited power to meet every emergency.

Thus equipped the United States approached their second armed conflict. We shall now see what changes in our military policy are apparent in the histories of the War of 1812 and the Florida War.

Peace-Time Legislation.

The first act of Congress for the reorganization of the Regular Army contained three very important provisions:

One of the requirements was that all officers and men should take the oath of allegiance to the *United States*, and another was, that all officers should be appointed by the *President*.

These two requirements are *fundamental* in military organization. Their advantages are so obvious that it is natural to ask why their adoption had been so long delayed.

The third provision authorized the President to call into service such part of the militia as he might judge necessary to protect the frontiers from the Indians and in this provision we have the *key to our whole subsequent military policy* in regard to Indian hostilities. The student will see in this a continuation of the policy in effect during the Revolution, of *falling back upon the militia* to meet current emergencies. Under this arrangement the President *could not add* a single soldier to the strength of the Regular Army, which was fixed by law at 1216 enlisted men, but his authority to call out raw troops, perhaps largely composed of "old, infirm men and young boys," as proved to be the case in the expedition against the Miami Indians in 1790,¹ was solely limited by his discretion. At this very time, had Congress given the President authority to *EXPAND* the Regular Army, he could have done so by the simple expedient of increasing the number of enlisted men in each company from 76 to 200, by which he would have had a force of over 3200 troops with the *best available officers* to command them and the recruits would have been mingled with the experienced soldiers so that they would have *more quickly learned their military duties*, and the important element of *DISCIPLINE* would not have been wanting.

¹ A court of inquiry sent to investigate the disaster of the Miami Expedition just referred to reported that among the raw troops called out by the President to meet the emergency of that Indian uprising, there were "a great many hardly able to bear arms, such as old, infirm men and young boys," and in its report upon a similar affair which occurred in the following year with even more disastrous results, a committee of the House of Representatives gave it as their opinion that "the want of discipline and experience of the troops" was one of the main causes of the defeat. In neither of these cases was it possible for the President to use the principle of expansion, but in both cases he was obliged to call out raw troops because that was what the law provided.

At this period in the development of our military policy, we should note a very interesting occurrence. This was in an act of Congress in 1791 which laid the foundation of the volunteer system by authorizing the President to enlist not to exceed 2000 men for a period of six months and to organize them and to appoint their officers when in his opinion such a force might be needed to reinforce the Regular Army in emergency. These troops were called "levies" which later became known as "volunteers" and were to be used in place of or in addition to, the militia, as the President might decide. It will be remembered that the officers of the militia had from the beginning been appointed by the state authorities. The officers of the "levies" under the law of 1791 were to be appointed by the President. This appointing power was subsequently transferred from the President to the Governors of the states. From your present information you should be able to state whether or not that transfer was wise, in the light of the lessons we have deduced from the Revolutionary War.

We now come to an event in military legislation that probably had greater national significance than any other since the adoption of the Constitution, which as you recall, defined the war powers of Congress, granting among other things, the power "to call forth the militia to execute the laws of the union, suppress insurrections and repel invasions."

Meaning of the Term "Militia."

We have indicated in a previous lecture that from the small size and temporary duration of the military establishment created by our early legislators their intention was to entirely dispense with a standing army. "But as time rolled on, Shay's rebellion, the constant Indian troubles and the possibility of conflict with foreign powers, brought about a wide spread conviction that the national defense could not be neglected. After much discussion, our statesmen then turned to that portion of the Constitution which mentions the militia and tried to satisfy public opinion by the organic law of May 8, 1792, entitled 'An act more efficiently to provide for the national defense, by establishing a uniform militia throughout the United States.'"

"This law did two things: 1st and most important, it defined the term 'militia' as used in the Constitution by requiring that 'each and every free, able-bodied white male citizen of the respective states, residing therein, who is or shall be of the age of 18 years and under the age of 45 years (except as hereinafter excepted) shall, severally and respectively be enrolled in the militia by the captain or commanding officer of the company within whose bounds such citizen shall reside,' thus laying down the truly democratic doctrine that *every able-bodied male citizen owed military service to his country*. 2nd. Instead of creating one national army, this law substituted 13 or more *state armies*. In place of having a small but efficient force of regulars, supported by indirect taxation, the citizens of each state were called upon to pay over their hard earned dollars to maintain militia. Had all the states with patriotic regard for the welfare of the whole country maintained their quotas of militia during the long intervals of peace, they would have been at the expense of a large military force for the benefit of the general government, and that, too, without compensation except in time of war." As every citizen fit for military duty was incorporated in the militia, it is evident that Congress could not avail itself of the services of any militia organizations, in opposition to the commands of the Governor without forcing its members to disobey orders. "Congress could not accept the services of individuals either as volunteers or regulars without encouraging the crime of desertion, for the law made no exceptions in favor of citizens belonging to the military force of the United States. *Under this system any state or states not in sympathy with the purpose of the general government could thwart the will of the nation.*"

"There have been dark hours in our history but probably none so full of danger to our national existence as during those years immediately following the Revolution when the fate of the infant republic hung by a slender thread." Her treasury exhausted, all but bankrupt, her people war-weary, eager to pursue that peace and

happiness for which they had struggled so long, with old ties severed and everything in the form of governmental policy to be built anew; is it to be wondered at if public opinion revolted at things military and sought by subterfuge to avoid the issue?

But the issue would not be avoided.

The peace following the Revolution brought the United States a period of expansion in its commerce and trade, abroad as well as at home, American ships, in ever increasing numbers, carried much prized products from the fields of America to the ports of Europe and this trade was caught in the storm of war then brewing across the Atlantic.

More and more, as the strife between France and England reached greater intensity, the merchantmen sailing under the American flag were, on one pretext or another, subjected to interference, obstruction and, finally, open violence. Retaliatory war measures mutually employed by France and England against each other in the form of commercial blockade well nigh drove American commerce from the sea.

France no less than England was an offender in this particular. By a glance at Plate 11 (Eighth Lesson) it will be seen that the situation with respect to France became so grave in the year 1800 that actual preparation for war was made by our Government in that legislation was passed authorizing the raising of over 50,000 troops.

We had in fact as just a cause for quarrel with France as with England on the grounds of interference with our seaborne trade. But to add to such interference with trade England asserted a right to search American vessels for English seamen and to remove them from American boats where found.

The mere assertion of such a claim was in itself sufficient to arouse bitter antagonism, but the actual execution of a design so contemptuous of American sovereignty was sure to bring war as it ultimately did in 1812.

The constantly increasing probability of war with Great Britain brought no change in the feeble, half-hearted measures in the direction of a suitable military organization to protect the national interests so seriously threatened. The state of lethargy persisted in the Congress as in the people until, finally, through the courage and energy of a few far-sighted men, bold if tardy measures were forced through our national legislature.

In the next lesson we shall see how a feeble military policy in 1912, cost the American people far more in seven years of war than a reasonable state of preparedness, with the maintenance of a proper military organization, would have cost during all the intervening years since the Revolution. We will see forcibly illustrated the words of one of our foremost leaders, that:

"We are a warlike, but not a military people; that is to say, we are quick to resent injury and ready to meet force with force, but we are not organized to employ force effectively." *Major General Leonard Wood.*

SEVENTH LESSON.

SIGNIFICANT BATTLES OF THE WAR OF 1812.

(Based Upon "American Campaigns" by Steele.)

Time and space do not permit us to go as far into the history of the War of 1812 and the Florida War as we would wish. Not that we can hope to find in the accounts of those conflicts much that was glorious or to the credit of American arms, but, because they afford most excellent material, illustrating the degree to which our people and our national Government had profited by the lessons of their previous military experience, and because they are rich with lessons of what not to do.

We shall confine ourselves in this lesson to the recital of some of the military operations which characterized the conduct of those wars, in the hope that by now a sufficient interest has been aroused upon the part of the students, to create a desire among them for a fuller knowledge of our national military history and policy.

As in the last lecture we shall start with a general statement of the situation as it was on the 18th of June, 1812, when Congress declared war against Great Britain.

General Considerations.

"The grounds upon which the declaration of war against Great Britain was made were just and sufficient, but not more so than they had been for several years. Nor can it well be seen by a careful review of the case that there was much less cause for war with France than there was for war with England. These two states had been engaged in hostilities for several years. The British Ministry by their 'Orders in Council' (a term which became familiar to us during the years 1915-1916), declared the coasts of France and her allies and colonies in a state of blockade. Napoleon replied with his famous Berlin and Milan decrees declaring a blockade of British ports. Neither belligerent, of course, was able to maintain an actual blockade of such extensive coast lines, but each seized all vessels caught violating its 'paper blockade.' The result of it all was that within three or four years American commerce was practically driven from the seas."

Does not this state of affairs illustrate the truth of the contention that was made in our first lesson "that the economic existence of any people must depend upon the power of its government to protect the national interests?"

"A former administration, Mr. Jefferson's, undertook to retaliate by issuing an embargo, prohibiting American vessels from going to sea. This was based on the supposition that Europe could not subsist without American products. It imposed a great hardship on our commerce, of course, and no effect on the belligerents, and was revoked after 14 months. The same thing was again resorted to in the present administration, Mr. Madison's, with the same result. Another grievance against Great Britain was based on her monstrous assumption of the right to search American ships for British subjects. In fact, this complaint was given first place in the President's message to Congress, recommending a declaration of war.

"But all these outrages had gone on for five or six years, and would probably have been tolerated till the end, if President Madison could have had his way—for he was as pacific and long-suffering as his mentor, Mr. Jefferson. But a squad of young men, led by Henry Clay and John C. Calhoun, gained control in Congress. They compelled the decision of war."

Plans.

"In the technical sense of the word, it cannot be said that either the British or the Americans had any plan of campaign. Sir George Prevost" (who you will remember as one of the British commanders in the Revolutionary War), "now the Governor General of Canada, had about 4500 regular troops at his disposal, and the British Army was too busy on the Continent of Europe to spare any more men to serve in America so all Prevost could hope to do was to defend Canada. He counted, also, upon assistance from the powerful Indian tribes along the outer edge of our western settlements. The famous Indian chief, Tecumseh, was keeping track with the quarrel going on between the British and Americans, and was ready to take advantage of it. He had gone from Michigan to Alabama, urging the tribes to unite against the Americans.

"The standing army of the United States at this time was only 6744 strong, notwithstanding that Congress foreseeing the possibility of a foreign war, had six months before, passed a bill increasing it to 35,000. Still our statesmen had no thought of anything but an offensive campaign. Canada was to be invaded and captured at once. Mr. Jefferson, who was a man of peace and detested a standing army, wrote from Monticello, his Virginia home: 'The acquisition of Canada this year, as far as the neighborhood of Quebec, will be a mere matter of marching, and will give us experience for the attack of Halifax the next, and the final expulsion of the British from the American continent,' a prophecy that showed no less ignorance of the science of war than of the horoscope.

"We never acquired any part of Canada and England has not yet been expelled from the American continent. Mr. Jefferson's idea of a practice march and school of instruction for the American military forces, with all due respect to that gentleman, is typical of that class of thinkers who profess to believe that armies may be created when needed, from a million men who will spring to arms between sunset and sunrise. However, this was the general opinion in the United States and the plan of campaign adopted by the War Department proposed that 'a main body should advance by way of Lake Champlain upon Montreal, while three columns, composed chiefly of militia, should enter Canada from Detroit, Niagara and Sackett's Harbor. *The details of the plan were not settled nor was the time fixed for the combined movement.* After overrunning Upper Canada, the President *expected* these columns to unite on the St. Lawrence and advance to the capture of Montreal.'"

Geography.

At that time the American frontier was guarded by garrisons at the following widely separated points (Plate 6): Plattsburg, Sackett's Harbor, Fort Niagara, Detroit, Fort Dearborn (Chicago), and Fort Mackinac at the junction of Lakes Huron and Michigan.

On the Canadian side of the line were garrisons at Montreal in Lower Canada; Kingston, opposite Sackett's Harbor; Forts Erie and George opposite Buffalo and Fort Niagara, and Fort Malden at the mouth of the Detroit River. The British had possession of the lakes, that is to say, they had small fleets on them, which enabled them to concentrate troops promptly at different points; while the Americans must march overland and in some cases cut their roads through forests.



PLATE 6.—From History of United States by Henry Adams.

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Operations.

Surrender of Detroit. General Hull, of Michigan territory, who had been an officer in the Revolutionary War was to command the column that was to advance *by way of Detroit*. In April and May of 1812 he had assembled at Dayton, Ohio, a force consisting of the 4th U. S. Infantry (300 effectives), three regiments of Ohio militia infantry and one troop of Ohio Dragons—about 1600 men in all. Two regiments of Michigan militia were to join at Detroit.

Detroit was 200 miles to the north and Hull's troops had to "cut a road through the forest, build bridges and construct causeways . . . but they made good progress." The march was begun on the 1st of June, 1812, and Detroit was reached on the 5th of July.

On July 12 General Hull crossed the Detroit River (Plate 7), the British militia guarding the river retired behind the Canard River, 12 miles below, without firing a shot. Hull occupied Sandwich, was well received by the inhabitants and issued a proclamation calling upon the people to give their allegiance to the United States. The proclamation had some effect for a time. The people seem inclined toward the United States. Several hundred sought the protection of Hull's troops and the Canadian militia deserted by scores. So General Hull conceived the notion that he was going to have a bloodless conquest of Canada. Besides his militia, however, the British commander at Malden had 280 regulars and 230 Indians with whom to contest the conquest. The left flank of his position was covered and supported by a fleet. Hull called a council of war, which decided against storming Malden and advised *delay*.

But every day's delay lessened Hull's chance of success. The Ohio militiamen were clamoring for a fight. *Nothing is so trying to raw troops* as lying idle in camp. Detachments scoured the country, meeting at first little resistance, one detachment even crossed the Canard River. But on the 19th and 25th of July, strong detachments were driven back with loss and the outlook became suddenly threatening.

Thenceforward every day brought Hull fatal news. His army lost respect for him in consequence of his failure to attack Malden; the British strengthened the defenses of Malden and on August 8 received 60 fresh men under Colonel Proctor from Fort Niagara. But worse than all this, on the 3rd of August the garrison of Fort Mackinac arrived at Detroit as prisoners of war on parole, announcing that Mackenzie had capitulated to a force of British and savages and that a horde of Indians from the northwest were on their way to fall upon Detroit. A day or two later a party of Indians under Tecumseh crossed the river and routed a detachment of the Ohio regiment on its way to protect a train of supplies coming up from Ohio. Hull decided at once to cross the river which he succeeded in doing the night of August 8 without interference from the enemy.

At this time Detroit contained about 800 inhabitants within gunshot of the British shore. The fort was a square inclosure of about two acres surrounded by an embankment, a dry ditch and two rows of palisades. It did not command the river, but was capable of withstanding a siege as long as its supplies would hold out. It was 200 miles from any American station from which reinforcements or supplies could come, and its only road of communication lay for 60 miles along the shore of Lake Erie, where a British fleet on one side and bands of savages on the other could always make it impassable. The road was also within easy striking distance of the British garrison at Malden.

Hull appreciated the danger of his position at Fort Detroit and wanted to retreat behind the Maumee without delay. But Colonel Cass informed him "that if this were done every man of the Ohio militia would refuse to obey and would desert their general . . . Hull considered that this report obliged him to remain at Detroit."

He ordered out a body of 600 men, including the 4th U. S. Infantry, to restore his communications with Ohio and to bring some supplies stopped at the Rasin River. Fourteen miles out of Detroit the detachment encountered a force of about

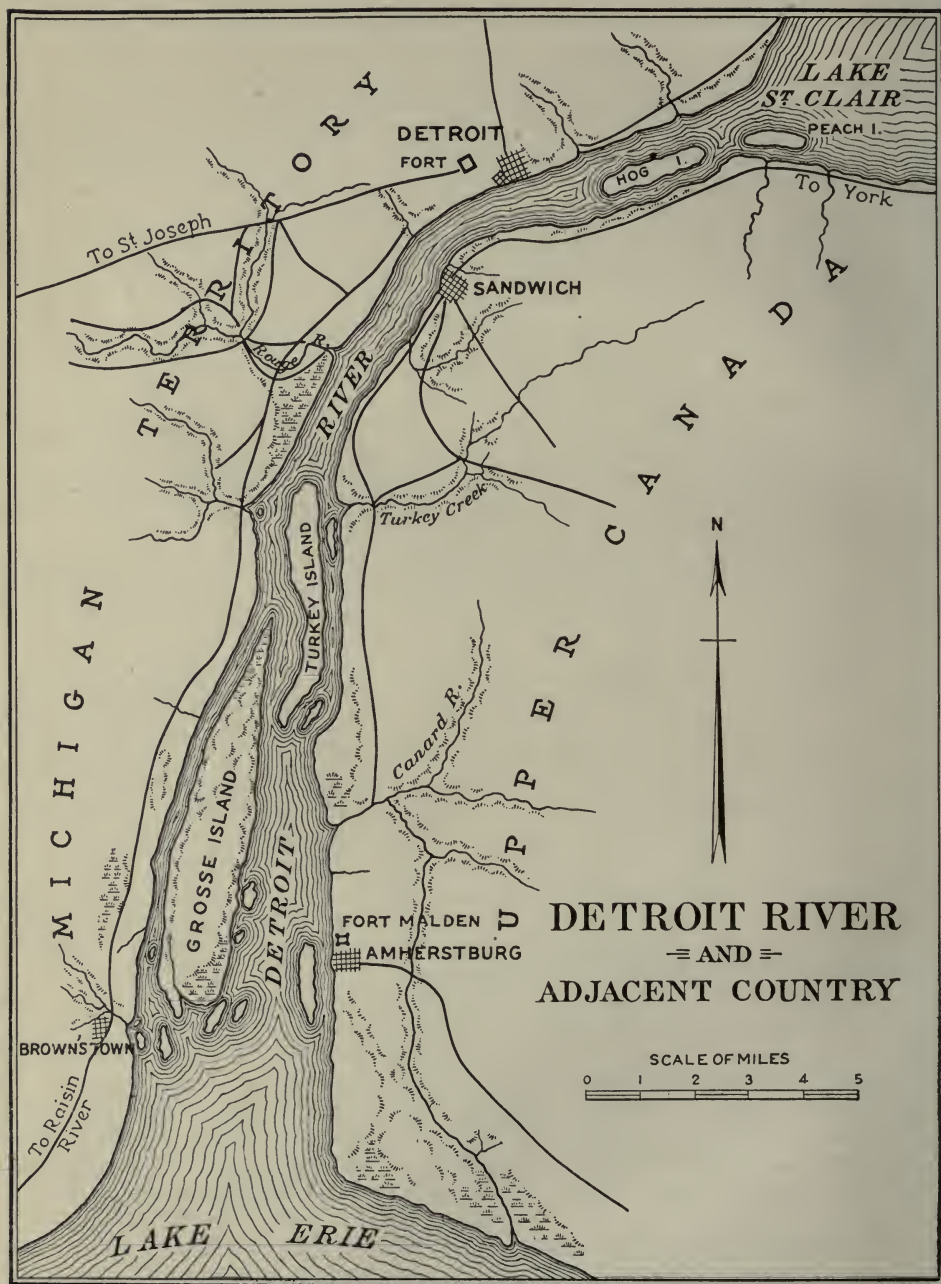


PLATE 7.—From History of United States by Henry Adams.

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200 British and 25 Indians and routed it. But the detachment did not push on to the Rasin River after the supplies; the next day it marched back to Detroit.

"The next four days were thrown away by the Americans. August 13 the British began to establish a battery on the Canadian side of the river to bombard Detroit. Within the American lines the army was in secret mutiny. *Hull's vacillations and evident alarm* disorganized his force. The Ohio colonels were ready to remove him from his command which they offered to Lieut. Colonel Miller of the 4th U. S. Infantry; but Miller declined this manner of promotion and Hull retained control.

On the 14th of August Hull sent the two Ohio colonels, McArthur and Cass, with their best men, about 350, to make another effort, by a long and circuitous route, to bring up the supplies, which were still at the Rasin River, 35 miles away. The next day, August 15, the British General Brock, who had arrived with reinforcements at Malden, and had taken command of the garrison, sent a summons to Hull to surrender. After some delay Hull declined, and then sent orders recalling McArthur's detachment.

As soon as Hull's reply reached the British lines, two British armed vessels moved up the river near Sandwich, while a battery opened fire on the town and the fort from the Canadian shore. "The fire was returned, but no energetic measures were taken to prepare either for an assault or a siege." During the night Tecumseh and 600 Indians crossed the river, some two miles below, and filled the woods, cutting the communications between McArthur's detachment and the fort.

A little before daylight on August 16, Brock, himself, with 330 regulars and 400 militia, carrying with them five little cannon, crossed the river to storm the fort. General Hull had 1000 *soldiers* within the fort, and McArthur's detachment was only a few miles away. General Brock's little detachment ought to have been killed or captured to a man. But they were not. As Brock came up the slope to reconnoiter the fort, he saw a white flag displayed. Within an hour Hull had surrendered not only the fort and its garrison, but McArthur's detachment, and the small force guarding the supplies on the Rasin River. Hull was afterwards tried by court-martial for treason and cowardice, convicted of cowardice and sentenced to be shot, but was pardoned by President Madison.

General Brock sent the American regulars that he captured, about 300 officers and men of the 4th U. S. Infantry, down Lake Erie to British prisons; but he gave our militia, about 2000 prisoners, *leave to return to their homes*.

The day before this an overwhelming body of Indians massacred the little American garrison at Fort Dearborn, "and with it the last vestige of American authority on the Western Lakes disappeared." Thenceforward the line of the Wabash and the Maumee became the military boundary of the United States in the northwest, and the country felt painful doubt whether even that line could be depended upon.

Recruitment and training of the army. In the first months of 1814 Congress passed bills increasing the Regular Army to 62,733, but by the following September enlistments had brought its numbers up to only some 38,000. There was, however, a marked improvement in the quality of the troops. "The regular troops at Buffalo passed the winter and spring of 1814 in *drilling and improving their discipline*, . . . brigade commanders, like Scott, personally taught their officers the elements of squad drill, so that they in turn might more thoroughly instruct their men."

Battles of Chippewa and Lundy's Lane. The war in Europe was at an end and in July, 1814, 14 of the best regiments of Wellington's army sailed for Canada. The British had possession of Lake Ontario so General Brown determined to cross the Niagara River and operate against the British in that section. Brown's army consisted of two small Regular Army brigades under Winfield Scott and Riply; a volunteer militia brigade, including some 600 Indians, under General Peter B. Porter; and a battalion of artillery under Major Hindman; in all about 3500 men for duty. On their side of the river the British had some 400 effectives under General Riall.



PLATE 8.—From History of United States by Henry Adams.

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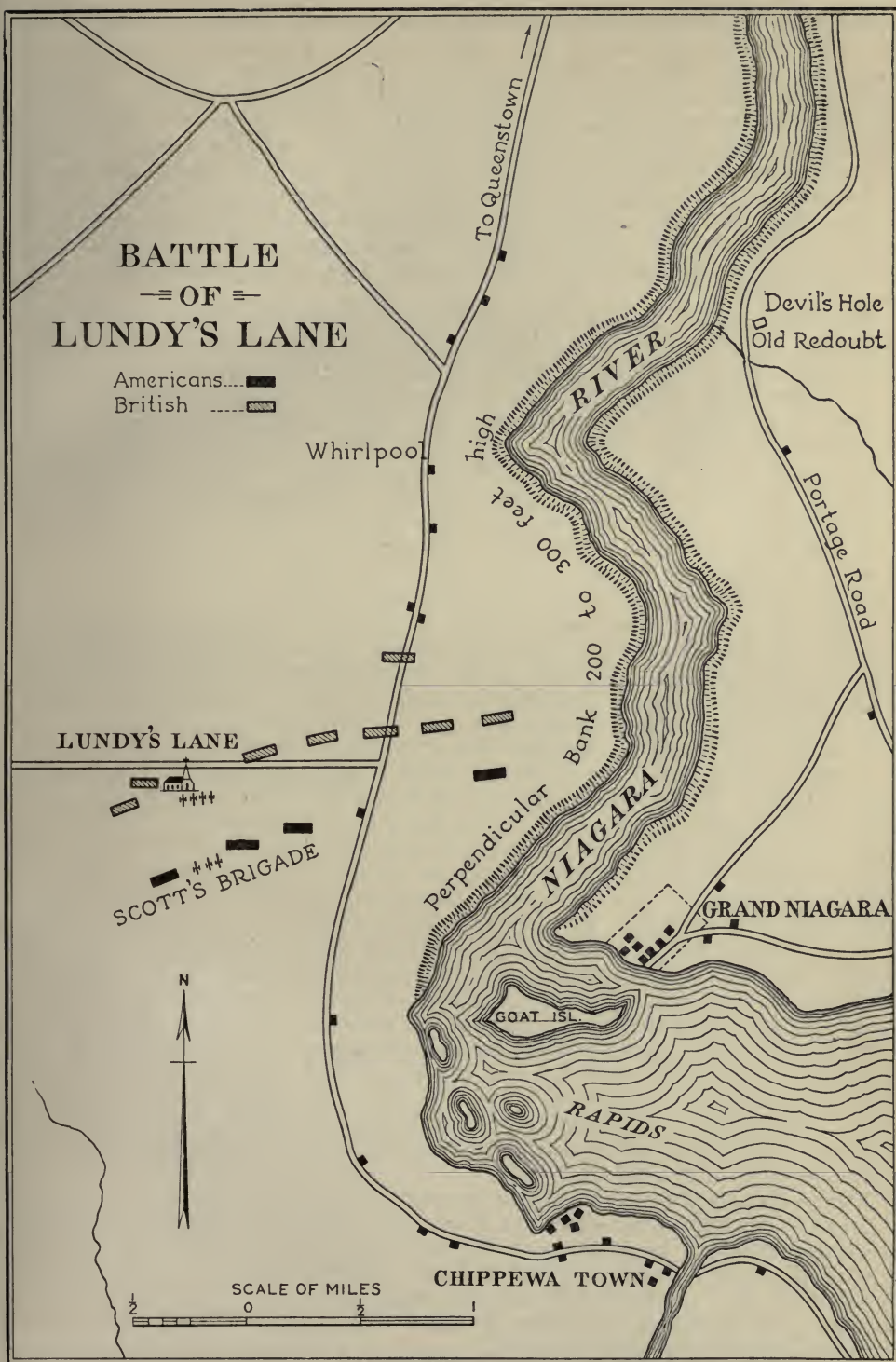


PLATE 9.—From History of United States by Henry Adams.

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On the 3rd of July (*two years after the arrival of Hull at Detroit*) Brown crossed the river and captured Fort Erie. (Plate 6.) He then moved down the river toward the other British posts. On the 5th of July Porter's brigade (volunteer militia) was in the lead, and met the British just beyond Streets Creek. (Plate 8.) The brigade after a short fight "broke and fell back in confusion"; but Scott came on with his brigade, and the "British line broke and crumbled away." Henry Adams says in his history: "The battle of Chippewa was the only occasion during the war when equal bodies of regular troops met face to face, in extended lines on an open plane in broad daylight, without advantage of position, and never again after that combat was an army of American regulars beaten by British troops." Had the historian looked further ahead in our annals, he might have added, "nor by any other troops."

Brown pursued the British beyond Queenstown, where he remained more than two weeks; then, learning that British reinforcements were arriving, he fell back to Chippewa, July 24. Then Scott's brigade of regulars moved forward to reconnoiter, and encountered the British at Lundy's Lane at 5 p. m., July 25. (Plate 9.) This brought on the battle of Lundy's Lane which lasted till 10 o'clock at night. The British were driven back from their first position, but the Americans withdrew from the field at the end of the engagement. (Plate 10.) In this engagement the British numbered 3045 and the Americans, less than 2000. The losses were 743 killed and wounded in the American side, and 643 in the British. Generals Brown and Scott were both badly wounded. This battle and that of Chippewa increased the British respect for American soldiery. They furnish the student very fine evidence of what may be accomplished through *training and discipline*.

Comment. The men that went out with our militia regiments certainly had as much natural courage as other Americans—all they lacked was *military training and educated leaders*. They were just as good in battle as regulars with no more training as was shown by the equally bad behavior of newly-enlisted regulars, under newly-appointed officers on several occasions.

As we all know, it is the discipline that is instilled into soldiers in garrison and camp and march, under qualified officers, which counts in campaign. The trade of a general has to be learned just as any trade requiring knowledge and technical skill; and our army was so small in 1812 that it had no officers that had had any experience in commanding considerable bodies of men. So the administration was forced to select its generals *from among the territorial governors and other civil officials*, some of whom had seen a little military service in the Revolutionary War, more than 30 years before. Not until they had gone through two years of training in the actual school of war, the best of all military schools, were Jacob Brown and Andrew Jackson and Winfield Scott able to show that they knew how to command in battle and campaign. The chief qualities of these generals, the qualities that achieve success were their energy, activity, and readiness to fight.

In its prosecution of the war the administration was greatly hampered by the opposition of the New England States. The governors of some of those states refused to let their militia leave the states, and took so little pains to enforce the laws of war, that the British Army in Canada was fed and supplied by New Englanders, and paid with money furnished by New England banks. The British Army also purchased supplies in New York.

When we remember that the British Government sent upwards of 450,000 troops to South Africa rather than submit to defeat there, we must congratulate ourselves that England had her hands full with her war on the continent of Europe; that the War of 1812 was no more in favor in England than it was in America; that the British really had no cause to fight us, other than to keep us out of Canada; and that the causes for which we were fighting ceased with the end of hostilities between Napoleon and the British Government.

From the beginning to the end of the war, there were called out on the American side 85,000 regulars and 471,622 militia and volunteers; while "the largest force of British regulars opposed to us was 16,500," and the British regulars were probably never at any one time aided by more than 800 Canadian militia and 2500 Indians.



PLATE 10.—From History of United States by Henry Adams.

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Why was it, that with its greater military man-power RESOURCE, the American Government was neither able to carry out its plans for the Conquest of Canada, nor to prevent the enemy from seizing and pillaging our national capital?

The War of 1812 was full of lessons for the military student, but especially for the American citizen—the *man who votes and makes the legislators that make the laws*. He is the one primarily responsible for all the failures of this war, just as the failure to end the Civil War in a single month, 50 years later, was due to a *lack of preparedness—to bad legislation*.

EIGHTH LESSON.

DEVELOPMENT OF THE MILITARY RESOURCES AND THE MILITARY POLICY OF THE UNITED STATES—1845 TO 1898.

Review of Third Lesson.

(1) "Policy" signifies the "frame" or "basis" of government. (2) Among modern states it is usually expressed in written form. Governments so defined are said to be "constitutional governments." In the absence of written constitutional forms, governmental policy is discoverable in the practice of following "precedent" or "tradition," of which the early acts of the American Continental Congress are an exemplification. (3) Governmental affairs of a modern state are intricate and it is impracticable to include all matters of policy in written constitutions. They contain the fundamental policy. In "representative" governments, the constituents are equally responsible with their chosen delegates, for the "policy" of the Government. (4) The general military policy of the United States of America is inscribed in the Constitution of the United States. The details of that policy are left to the discretion of Congress. (5) In carrying out the "general military policy" Congress has been guided by "tradition" and experience. The system under which ability to raise men was made the sole qualification for command was condemned by Washington. The partial success of raw troops at Bunker Hill blinded Congress and the public to its rear lesson, and induced the political leaders to place too much reliance in undisciplined levies. (6) The Regular Army of the United States developed from the Continental Army created by the "resolution" of the Second Continental Congress, June 14, 1775. During the Revolution an intense feeling of opposition to a standing army almost wrought the ruin of our cause. The efforts to carry out a policy of maintaining an inexpensive military establishment has repeatedly led to the employment of great numbers of untrained troops at tremendous cost of life and money.

Opposition to a Standing Army.

The lessons of the Revolution and of the War of 1812 point so conclusively to the superiority of trained troops over raw levies, and the fact is so clearly evident from the history of the United States that the Regular Army has never been used for tyrannical oppression, but, on the contrary, has ever been the champion of freedom and democracy, that it seems common sense should challenge the opposition to a standing army which is apparent in the acts of our national legislature and, hence, in the public opinions of the periods we have thus far covered in our study.

Why was public opinion opposed to a standing army during the Revolutionary War? Why did that same opposition prevail after the long, arduous struggle of the Revolution, during which the Continental (Regular) Army proved loyal upon every occasion and repeatedly demonstrated that it was the chief military reliance of the young nation?

The answers to these questions are part of the evidence of the "traditional" character of our national military policy. For a complete understanding of the causes which produced this effect, the student is referred to the historical despotism of Cromwell, to the reactionary history of the reign of Charles II, the military oppression by James II, and the conduct of the English regular troops toward the

American Colonists during the French and Indian Wars. A thoughtful examination of these periods should give the student a very clear comprehension of the public attitude toward a standing army in the early history of the United States.

The Military Establishment of the United States.

Having, in previous lessons, examined the basis of our national military policy, we will now proceed to follow its development up to the outbreak of hostilities between the United States and Spain in 1898, as shown by the "plans" upon which our national legislature relied for the national defense and the prosecution of foreign wars, during the first hundred years following the Revolution.

Plans.

The constitutional powers vested in Congress,

1. To raise and support armies ;
2. To provide and maintain a navy ;
3. To provide for calling forth the militia,

were all necessary in order to give full force and effect to the power "to declare war," and, also, to enable the Government to fulfill the obligation imposed in Section 4 of Article IV, viz.: That "the United States shall guarantee to each state in this union a republican form of government, and shall protect each of them against invasion, and . . . against domestic violence."

Being charged with these duties, Congress was confronted by the necessity for formulating a plan for their execution. The Constitution did not tell *how* the armed forces of the nation were to be raised. It only required that "the President shall be the commander-in-chief of the army and navy of the United States, and the militia of the several states when called into the actual service of the United States."

The mention of "the army and navy of the United States" is significant of a recognition of the need for a "standing" or permanent element in the military establishment of the nation in contra-distinction to another element denominated "the militia of the several states" which Congress was empowered to "regulate and provide for when called into the service of the United States" upon special occasions. However, all that we have in the way of authoritative "plans" for the military establishment is contained in the legislative "acts" of Congress. Those acts relating to the military establishment are generally entitled "an act more effectually to provide for the national defense." These acts, of which there have been many, are no more nor less than *plans* for our national defense.

Organization—General Importance.

The first step toward putting any plan into effect is organization, which may be resolved into the very simple act of appointing an agent clothed with authority to do the things necessary to execute the plan, or, on the other hand, organization may involve many complex elements requiring experience, technical knowledge, and deep study upon the part of those primarily responsible for the formulation of the plan.

Organizations are now days created for almost every conceivable purpose and the idea of "organizing" is so popular and the fundamental rules are so generally understood that we need not dwell upon the matter here. However, we venture to surmise that the percentage of plans that have failed in the execution is very high, and that in business, social, or philanthropic activities, there has been an appalling waste of time and money and an infliction of much human suffering, which, if the facts could be known, would be directly charged to faulty organization.

Organization of the Military Establishment of the United States.

The acts of Congress dealing with the organization of our military establishment are too numerous to mention in the space of these lessons. It will be sufficient to show the state of the military organization at critical times in our national history and, within the scope of this lesson, we will take the beginnings and closings of the wars from the Revolution to the Spanish-American War.

Strength and Organization of the Regular Army.

As the Regular Army forms the nucleus around which the war forces of the nation are built, it is expedient to first examine the data with respect to it.

Authorized strength. The total authorized strength of the Regular Army since 1790 is shown in the following table and chart—by years.

In the table, figures for years not shown are the same as those for the last previous year listed.

Source of information: Heitman's "Historical Register of the U. S. Army" and recent legislation.

This chart gives a picture of what Congress planned for in the way of a Regular Army during the period of years shown. The degree of comparative success with which the various projects met, for the period from 1810; to include the Civil War is shown by Plate 12.

Year	Number	Year	Number	Year	Number	Year	Number
1790	1,273	1814	62,674	1862	39,273	1905	64,336
1791	2,232	1815	12,383	1867	54,641	1907	66,385
1792	5,414	1821	6,126	1869	37,313	1908	73,867
1796	3,359	1832	7,129	1871	35,353	1909	82,063
1798	4,173	1833	7,994	1874	27,472	1910	83,219
1799	51,691	1836	7,957	1889	28,417	1911	81,359
1800	4,436	1839	12,539	1898	64,719	1912	82,300
1802	3,287	1846	17,812	1899	67,585	1913	86,340
1812	35,752	1847	30,865	1901	100,619	1914	89,642
1813	57,351	1849	10,317	1902	74,351	1916	250,911
1808	9,921	1855	12,698	1903	63,686	1920	297,717

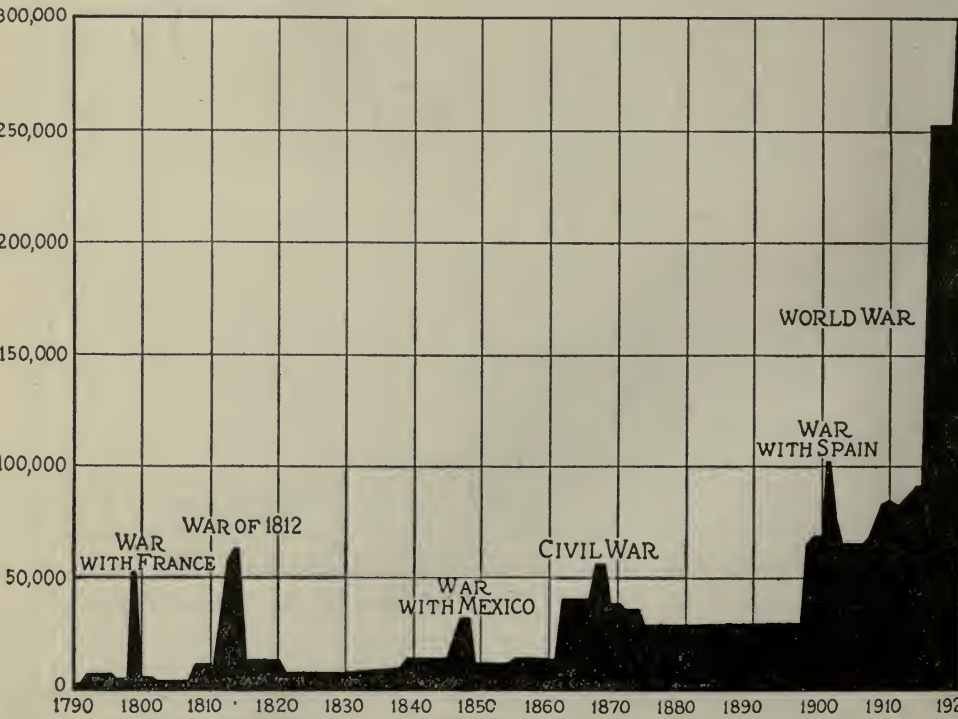


PLATE II.—Total Authorized Strength July 1 Each Year.

Certain characteristics of the curve showing the *AUTHORIZED* strength of the Regular Army are at once apparent, viz.:

1. That our preparation for war has been hasty, feverish and sometimes hysterical, in that the preparation has generally been commenced coincident with the outbreak of hostilities or upon occasions, after the actual occurrence of them.

This characteristic is made more evident in the case of the War of 1812, by an examination of the pre-war legislation which shows that in 1802, after the apprehension of war with France had subsided, Congress reorganized the army and reduced its strength by the act of March 16 of that year which provided for only one regiment of artillery and two regiments of infantry. Then, in 1808, when the probability of war with England was becoming greater, the authorized strength of the army was increased by adding five regiments of infantry; one regiment of riflemen; one regiment of light artillery and one regiment of light dragoons. It was

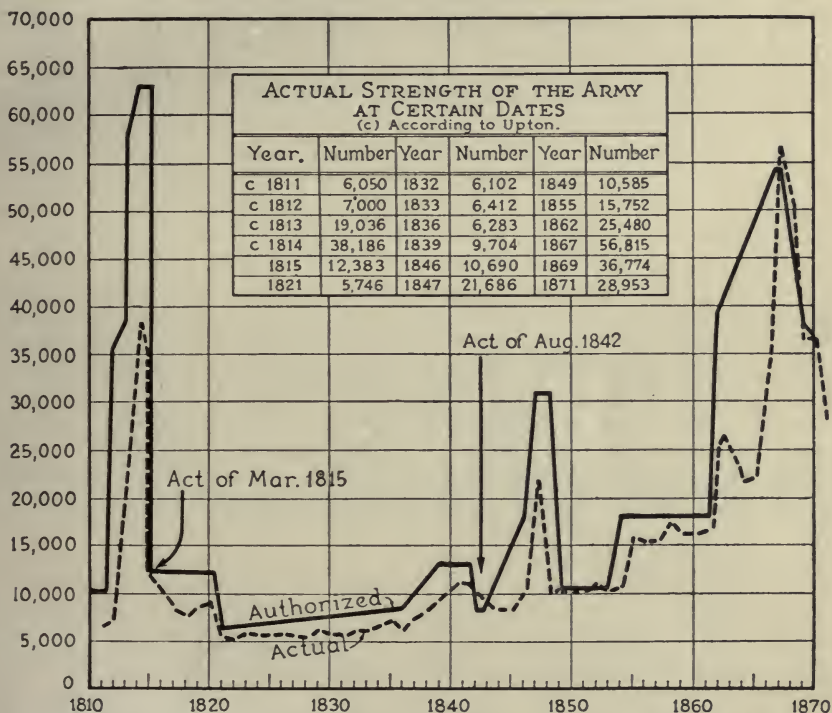


PLATE 12.—Comparison of the Authorized Strength of the Regular Army 1810 to 1870.

Sources of information: Heitmen's Historical Register of the U. S. Army and Upton's Military Policy of the U. S.

intended that the army so reorganized was to have a total strength of 9921. Next, we find that by the act of January 11, 1812, the army was again increased by the addition of more regiments. War against England was declared as early as June 18 of the same year.

2. That the strength of the army in time of war has been increased from two to six times its peace strength. In consequence of the foregoing characteristic, our army has not been able to prepare itself to perform its war duties as effectively as would have been possible had it received a constant increase in strength proportionate to the danger of war.

What actually occurs when the military needs of the nation are neglected in time of peace is, that whatever military force the nation may actually have on hand when war comes, there is a great weakening of the military strength through the adulter-

tion of the trained forces by the sudden addition of large numbers of raw recruits who must be equipped and trained for battle.

3. That after each war the *AUTHORIZED* strength of the Regular Army has been suddenly reduced to a level approximately where it was before the war and in some cases to a still lower level.

An instance of this is seen in the act of March 3, 1815. One consequence of this policy is that the army has frequently been unable to meet the peace-time demands made upon it by the constant increase in our population (see Plates 13 and 14) and the expansion of our territory.

4. That no sooner has the strength of the army been reduced than it has become necessary to increase it.

This characteristic is shown in the upward trend of the curve, Plate 12, immediately or soon after each drop. While the maintenance of a small standing army in time of peace is in accord with our democratic principles and is economically correct, there should be a proper ratio between the strength of the army and the population of the whole country that will enable the former to effectively perform all of the peace-time duties the national interests may demand of it and at the same time enable it to provide trained personnel adequate for the greater war-time needs of the country. We should seek to avoid false economy in time of peace which inevitably will throw a tremendous financial burden upon the people in times of war.

Actual strength of the army. Plate 12 affords a very interesting study of the success with which the military plans of the Government have met with respect to the actual numbers of troops in the Regular Army during the period shown.

It will be seen that in only four instances did the *ACTUAL* and *AUTHORIZED* strengths coincide. In 1815, 1842, 1849 to 1853, and in 1869. In each instance the coincidence resulted from a sudden reduction in the *AUTHORIZED* strength before the *ACTUAL* strength could be reduced through the discharge of surplus soldiers who had been brought into the military service at a time of emergency. Otherwise, it is clearly shown that all of the inducements that Congress from time to time offered in the form of bounties during wars, was not sufficient to maintain the strength that our legislators intended the army to have. The causes of this condition go back to the days of the Revolution and are to be found in the dual military establishment that is traditional with us, and in legislation which for many years tied up the military man-power of the nation and rendered it inaccessible to Congress for general military needs.

Total authorized strength of the Regular Army vs. population—by years. Since 1789, when the first army legislation under the Constitution was passed, the authorized strength of the Regular Army has been increased greatly with the outbreak of each war, marked reduction in strength following rapidly after the cessation of hostilities.

During this time the average number of officers and enlisted men per 10,000 population has been 10.5 (Plate 13.)

Plate 12 also shows that the maximum *ACTUAL* strength in each of the three wars shown was not reached until the latter half of the war. This is a very significant characteristic defect of our military policy. It has been said "that the problem of military organization has two aspects, a dynamic aspect and a political aspect. The measure of military force required to meet any given emergency is purely dynamic, while the form of military institutions must be determined on political grounds, with due regard to national genius and tradition. There can be no sound solution of the problem if either of these fundamental aspects be ignored. The army at any time and place must be strong enough to defeat any enemy that may oppose it at that time and place. We are concerned more with the time required to raise the force of trained troops than with their ultimate numbers. If we need 60,000 soldiers in a given terrain in 30 days and can deploy only 50,000 soldiers in that place and at that time, we are not prepared for the emergency even if our plans provide for 10 times that number at some period in the future. Whatever our military institutions may be we must recognize the fact that victory is the reward of superior force, that modern wars are short and decisive, and that trained armies alone can defeat trained armies."

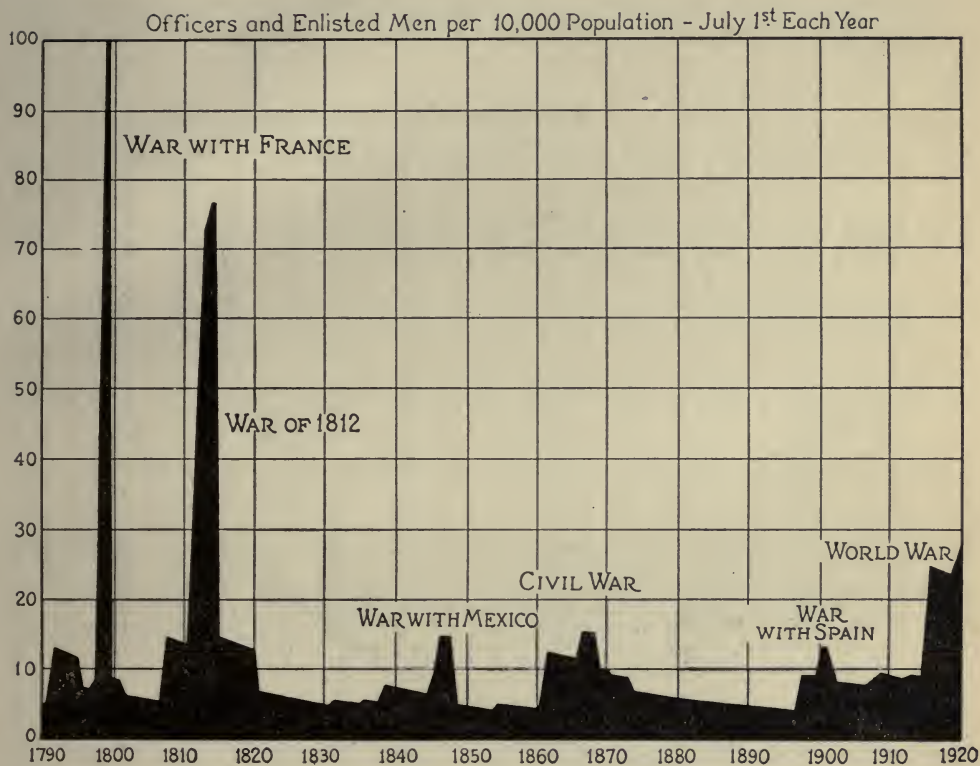


PLATE 13.—Total Authorized Strength of the Regular Army *vs.* Population—By Years.

Since 1789, when the first army legislation under the Constitution was passed, the authorized strength of the Regular Army has been increased greatly with the outbreak of each war, marked reduction in strength following rapidly after the cessation of hostilities.

During this time the average number of officers and enlisted men per 10,000 population has been 10.5.

In proportion to population the greatest authorized strength of our regular land forces was that provided by the Act of March 3, 1799, during the war with France. Under this act, our population then being scarcely more than five million, an army of 51,691 was called for, the ratio being one man in the army for every 100 persons in the country. This ratio was approached but not equalled during the War of 1812. From that date until 1916 it fluctuated around 6 per 10,000, never going as high as 20. In 1916, with the passage of the National Defense Act, the ratio was increased to about 25 per 10,000. Under the recent Reorganization Act, with an estimated population of 107,000,000, the ratio is about 28 per 10,000.

Sources of information: Heitmen's "Historical Register of the U. S. Army," recent legislation and Census Reports.

Growth of population of the United States since 1800. The probable population of the country has an important bearing on the preparation for possible future wars. (Plate 14.)

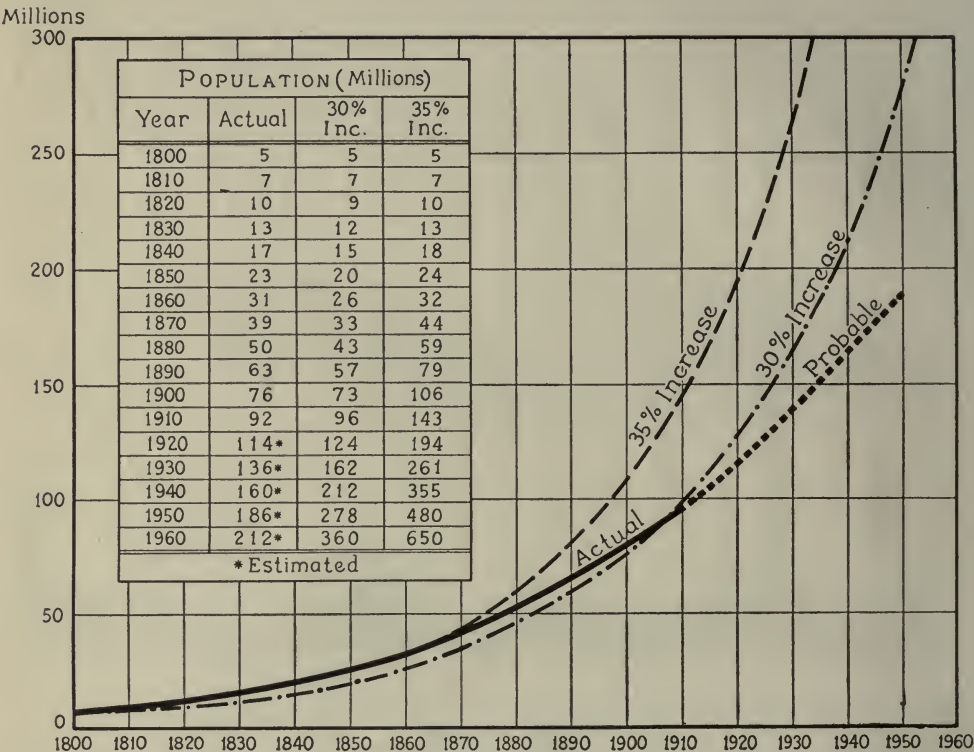


PLATE 14.—Growth of Population of the United States Since 1800.

The increase between 1800 and 1910 equals an average increase of nearly 30 per cent per decade. If this rate continued we should reach a population of 300,000,000 in 1953. However, a more detailed study of the data shows that this is greatly in excess of any reasonable expectation. From 1800 to 1860 the average rate of increase was 35 per cent per decade. If this had continued we should now have a population of 194,000,000. The increase between 1890 and 1910 was only 21 per cent per decade.

The curves show the population we would have had at 30 per cent and at 35 per cent increase per decade compared with the population we actually did have, and a forecast of future increase reaching 186,000,000 in 1950. It is believed that this is as much as can be reasonably expected.

In none of our wars up to 1917 were our armies confronted by trained armies. The Civil War is a notable instance of two equally unskillful armies gradually developing in the presence of each other into powerful and expert military forces.

The *ACTUAL* strength curve of Plate 12 explains in part the statement heretofore made that "our military policy has led to the prolongation of war, with all its attendant evils." For instance, the United States declared war against England in 1812, but it was two years later, 1814, before the military strength of our Government had reached a point where its superiority of force was sufficient to secure victory, after which the war was brought to a speedy termination. Had the United States in 1812 an army strong enough to defeat any enemy that might at that time have opposed it, the War of 1812 would have ended after one well-directed campaign and the nation would have been spared three years of war and the mortification of having its capital sacked by a foreign army.

In 1845 our Government declared war against Mexico, but was unable to terminate that war until two years later when its military forces had been raised to the strength necessary to overcome the Mexican resistance; and in 1861, for the want of a sufficient army to insure the stability of our Government and to fulfill the guarantees of the Constitution, the nation was plunged into four years of domestic war.

Plate 13 shows that from 1791 to 1898 there was a constant downward trend in the ratio of our Regular Army strength to the strength of population. During that period the average number of officers and enlisted men per 10,000 of population was 10.5 and the chart shows that the height of this ratio was due to the critical war periods. It is pertinent to inquire whether those critical periods would not have been avoided had the nation been provided with a military establishment commensurate to its growing territory, population and international relations. Apropos of this query, the promptness with which the French Government withdrew its troops from supporting Maximilian in Mexico, when the Civil War was ended and Napoleon was given to understand, by the United States Government, that the empire in Mexico and the presence of French troops could not be regarded with favor by the citizens of the United States, is indicative of what military preparedness will do to sustain the international relations of a government and at the same time prevent war.

Employment of Militia and Volunteers in War.

By far the greatest numbers of troops employed by the United States in all its wars up to 1917, have been in that class denominated VOLUNTEERS. During the Civil War the Government was forced to resort to the draft system, but only 2 per cent of the forces were raised in that way. Otherwise the chief reliance of our Government in times of public emergency has been upon the patriotic spirit of the people which it was felt could be depended upon to produce a sufficient number of men who would offer themselves voluntarily to serve as officers and soldiers.

It is true that the Government has always been successful in raising large numbers of volunteer soldiers, but it is also to be noted that the inducements that the Government had to offer in order to secure troops in the War of 1812, the Mexican War, and the Civil War resulted in constantly increasing bounties. Reliance upon a volunteer system for the procurement of soldiers in times of emergency has all of the objectionable features of a sudden and great increase in the strength of a regular army under like circumstances, but greatly magnified and, in addition thereto it is subject to the criticism that the principle of human conduct upon which the system relies, forces the stronger characters to come forward while the weaker ones remain at home and seek to avoid the dangers and discomforts of the field. Thus, the nation suffers a double loss: 1st, In the withdrawal of men from trades, business and professions without regard to any system, there is an economic loss to the communities and to the whole country; 2nd, through death and disease there is a loss of men who possess the very qualities most essential to success and consequently a lessening of the material from which leaders for the masses of troops may be developed.

Plate 15 shows the composition of the field strength of the troops employed by the United States during the war periods shown. From this chart it is evident that the great bulk of our military forces in time of war has been drawn from the civilian population. In brief, the citizen soldier was the one who has had to bear the brunt of hardships in war and this condition could not be relieved by the Regular Army because of its relative weakness in numbers at all times.

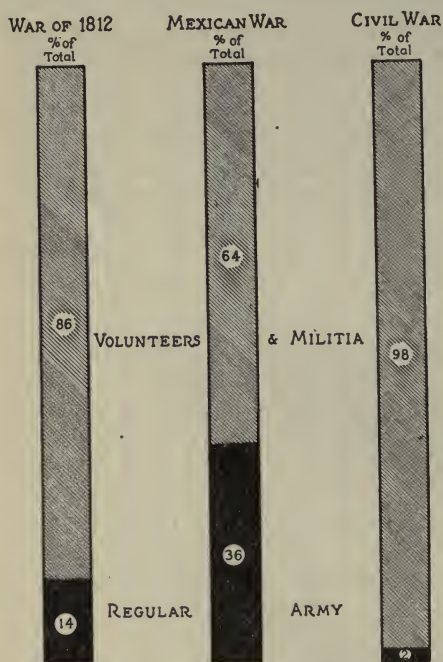


PLATE 15.—Troops Employed by the U. S. in Certain Wars.

The lesson to be drawn from these charts is the importance of proper military organization. It has been stated that "it is the traditional policy of the United States that the military establishment in time of peace is to be a small army and that the ultimate war force of the nation is to be a great army of citizen soldiers. This fundamental theory of military organization is sound economically and politically. The maintenance of armies in time of peace imposes a heavy financial burden upon the nation, and the expenditure for this purpose should be kept at a minimum consistent with effectiveness for war. But reliance upon citizen soldiers is subject to the limitation that they cannot be expected to meet a trained enemy until they, too, have been trained. Our history is full of the success of the volunteer soldier after he has been trained for war, but it contains no record of the successful employment of raw levies for general military purposes.

It is therefore our most important military problem to devise means for preparing great armies of citizen soldiers to meet the emergency of modern war. The organization of the Regular Army is but a small phase of this problem. It is simply the peace nucleus of the greater war army, and its strength and organization should always be considered with reference to its relation to the greater war force which cannot be placed in the field until war is imminent. The problem is one of expansion from a small peace force to a great war force. Its solution therefore involves the provision of a sufficient peace nucleus, the partial organization and training of citizen soldiers in peace, and provision for prompt and orderly expansion on outbreak of war."

NINTH LESSON.

THE WAR WITH MEXICO. TAYLOR'S CAMPAIGN.

(Based Upon "American Campaigns" by Steele.)

The Cause of War.

"This war grew out of the annexation of Texas and our dispute with Mexico over the boundary line. Texas had achieved her independence of Mexico in 1836, and in less than a year her sovereignty was acknowledged by our Government. Soon afterwards Texas applied for annexation to the United States, and a bill to that effect passed in March, 1845.

"As had been anticipated, Mexico showed her resentment of this act, by recalling her minister at once from Washington, and terminating further diplomatic intercourse with the United States."

Military Preparations.

"On account of this attitude on the part of the Mexican Government, and hostile demonstrations and rumors along the Rio Grande, Colonel Zachary Taylor, 6th Infantry, United States Army, acting under orders from the War Department, established a large camp of troops at Corpus Christi (Plate 16), at the mouth of the Nueces River, in the autumn of 1845."

His command consisted of the entire regular army of the United States, as it then existed, with the exception of one regiment of dragoons and three of infantry. The weakest of the regiments contained 169 rank and file and the strongest only 375.

The Mexican Army.

"The Mexican forces, including state troops and rural guards (a sort of government constabulary), were estimated at about 30,000; but a revolution led by General Parades had just overthrown the government. The changes among the higher officers, and the jealousies and confusion occasioned by this event greatly hindered the mobilization and hampered the operations of the Mexicans."

Geography.

"The territory between the Nueces River and the Rio Grande, about 130 miles wide along the coast (Plate 16), was in dispute. Texas claimed the Rio Grande as her boundary, but as yet had exercised no jurisdiction south of Corpus Christi. For several hundred miles back from the coast this country was low and flat, covered with prairie grass, chaparral (thickets of mesquite), and cactus flats in irregular patches of greater or less area. There were also many marshes and lagoons, especially near the coast. There were trails and roads practicable for troops and artillery in almost any direction.

"South of the Rio Grande the coast and the country are of a similar character westward to the slopes of the Sierra Madre—a part of the great mountain chain that forms the backbone of the continent—the great divide between the Atlantic and the Pacific slopes. But the country is more densely covered with trees and vegetation, and the climate is hotter, unhealthier, more unbearable. This is the Tierra Caliente (the hot country). It generally contains plenty of water and grass, but in no other respect is it fit for the march of troops. The mountain slopes lead up to the high interior table-land, which falls away gradually from a general elevation of about 7500 feet at the City of Mexico, to about 4000 feet above sea-level at El Paso.

"The main road southward to this table-land broke into the mountains at Monterey; and at Saltillo, 70 miles further southward, came out upon the high plateau. From Saltillo on to San Luis Potosi, some 300 miles, the country was so dry and barren as almost to be a desert. There was not a running stream between those points. From San Luis Potosi southward the country was excellent in every way—fertile, cool, well-watered, thickly settled, and traversed by good roads."

The Mexican War was carried out by two separate campaigns, one under General Taylor, whom we have already mentioned, and the other under General Winfield Scott, the hero of Lundy's Lane in the War of 1812. Our space is too limited to recount the operations of these campaigns and we are obliged on that account to content ourselves with an effort to give the student an idea of the general plans of the two commanders and some of the salient features of their operations.

General Taylor's Campaign.

General Taylor's instructions were, "to defend Texas from invasion . . . and should Mexico invade it . . . (to) employ all his forces to repulse the invaders, and drive all Mexican troops beyond the Rio Grande." Further instructions from the Secretary of War said, "the assembling of a large Mexican Army on the borders of Texas, and crossing the Rio Grande with a considerable force, will be regarded by the executive here as an invasion of the United States and the com-



PLATE 16.—From American Campaigns by Major Matthew Ferney Steele, U. S. A.
War Department Document No. 324.

mencement of hostilities. An attempt to cross the river with such a force will also be regarded in the same light. . . . In case of war . . . your main object will be the protection of Texas; but the pursuit of this object will not necessarily confine your action within the territory of Texas." Taylor was also authorized to call on Texas and several other near states, for volunteers, if he should need them. He was not, however, to call for volunteers until invasion actually took place, hence was to have no opportunity to train them in his winter camp at Corpus Christi. He spent the time, however, in training and drilling his regulars. They had never been assembled in large bodies before, but "four-fifths of his officers had received the benefits of professional training at the Military Academy, or in the Florida Wars."

Mexico's plan was to assemble as large a force as practicable at Matamoros, and drive all American troops beyond the Nueces.

Operations.

"Better to carry out his instructions, General Taylor marched his little army to the Rio Grande, and at the end of March, 1846, established a camp opposite Matamoros, and a depot of supplies at Point Isabel, nine miles to the northeast on the coast. (Plate 17.) On his way he was met by a Mexican delegation sent to protest against his invasion of Mexican territory; and he himself issued a proclamation announcing the purpose of his occupation, and promising protection to the people.

"Meantime a Mexican Army estimated at 6000 had assembled on the opposite side of the Rio Grande, at Matamoros, under General Ampudia. On the 12th of April Ampudia sent General Taylor an order to break up his camp within 24 hours and withdraw to the Nueces River, or accept war as the alternative. Ampudia was superseded in command within a few days by General Arista, who was as eager for action as Ampudia.



PLATE 17.

"On the 24th of April Arista ordered a considerable detachment under General Torrejon to cross the Rio Grande at La Palangana, six miles above Matamoros. The next day this detachment encountered a small reconnoitering party of the 2nd Dragoons, under Captain Thornton, and killed one officer and 16 men, and captured the rest. The entire American loss, killed and captured, was four officers and 59 dragoons.

"This was the beginning of the war. General Taylor at once asked the governors of Texas and Louisiana each for four regiments of volunteers. The mouth of the Rio Grande was blockaded by an American revenue cutter and the brig Lawrence to prevent supplies from entering by water for Arista's army.

"General Taylor had caused his camp to be fortified and prepared for defense. Anxious about the safety of his base of supplies, he left Major Jacob Brown with the 7th Infantry and two batteries at this camp, and started himself with the rest of his force, on the afternoon of May 1, for Point Isabel, arriving there the next day at noon.

"Arista was anxious for a battle with the little American Army. So he marched to Palo Alto, on the road between Taylor's camp and Point Isabel; and to hasten General Taylor's return, he dispatched orders to General Mejia to open with artillery on the American camp, and sent General Ampudia with four cannon and a considerable force to attack it on the northern bank of the river. Ampudia opened fire upon the camp on the morning of May 5, and kept it up until midnight of the 7th, when he was recalled by Arista to aid him again Taylor, who had started back from Point Isabel to the relief of Major Brown's garrison.

"At about noon on May 8 Taylor found Arista's army in line of battle near Palo Alto.

"Taylor's line advanced in regimental columns until the Mexican artillery opened upon it. Thereupon it deployed."

The battle that ensued lasted until dark when the Mexicans retired and the Americans bivouacked on the battlefield.

"Although General Taylor took the offensive in this battle and advanced to the attack, he found himself outnumbered by Arista's army, especially in cavalry, and was immediately thrown upon the defensive. General Wilcox, in his account, says: 'The action of May 8 on the plains of Palo Alto was, on the part of the United States forces, defensive and mainly of artillery against Mexican artillery and cavalry supported by infantry.'"

"One incident occurred in the combat that might happen, with like effects, even in our day of long-range magazine fire: The prairie grass was set on fire by bursting shells, and the smoke for a time concealed the movements of the hostile armies from each other." The use of smoke to conceal tactical movements is not an unusual feature of the modern battlefield.

"At Palo Alto the Americans numbered 2288, and the Mexicans were estimated at about 6000. The Mexican account of the combat gives the number of the Mexicans as only 3000.

"At dawn the next morning the hostile armies were in sight of each other, but by sunrise the Mexicans had begun a retreat for Matamoros. The American Army, with its front well covered by scouts, took up the pursuit. About three miles from the battlefield of the day before, Arista in his retreat came upon what he conceived to be a very strong position. Here he decided to halt his army. (Plate 18.) He placed his line in a resaca, or narrow, shallow swale which crossed the road in the midst of a thick chaparral and ended in a pool of water at each end. Arista appears not to have believed that the Americans would seriously attack him in his position; he had his tent pitched and was busy writing, when General Taylor opened fire on his line, and began the battle of Resaca de la Palma. Some Mexican artillery in and near the road on both sides of the swale could not be driven back; so Captain May was ordered to charge it with his squadron. On account of the dense growth May could only move in the road, and had to charge in column of fours. He captured seven guns and a Mexican general. He was driven from the battery by

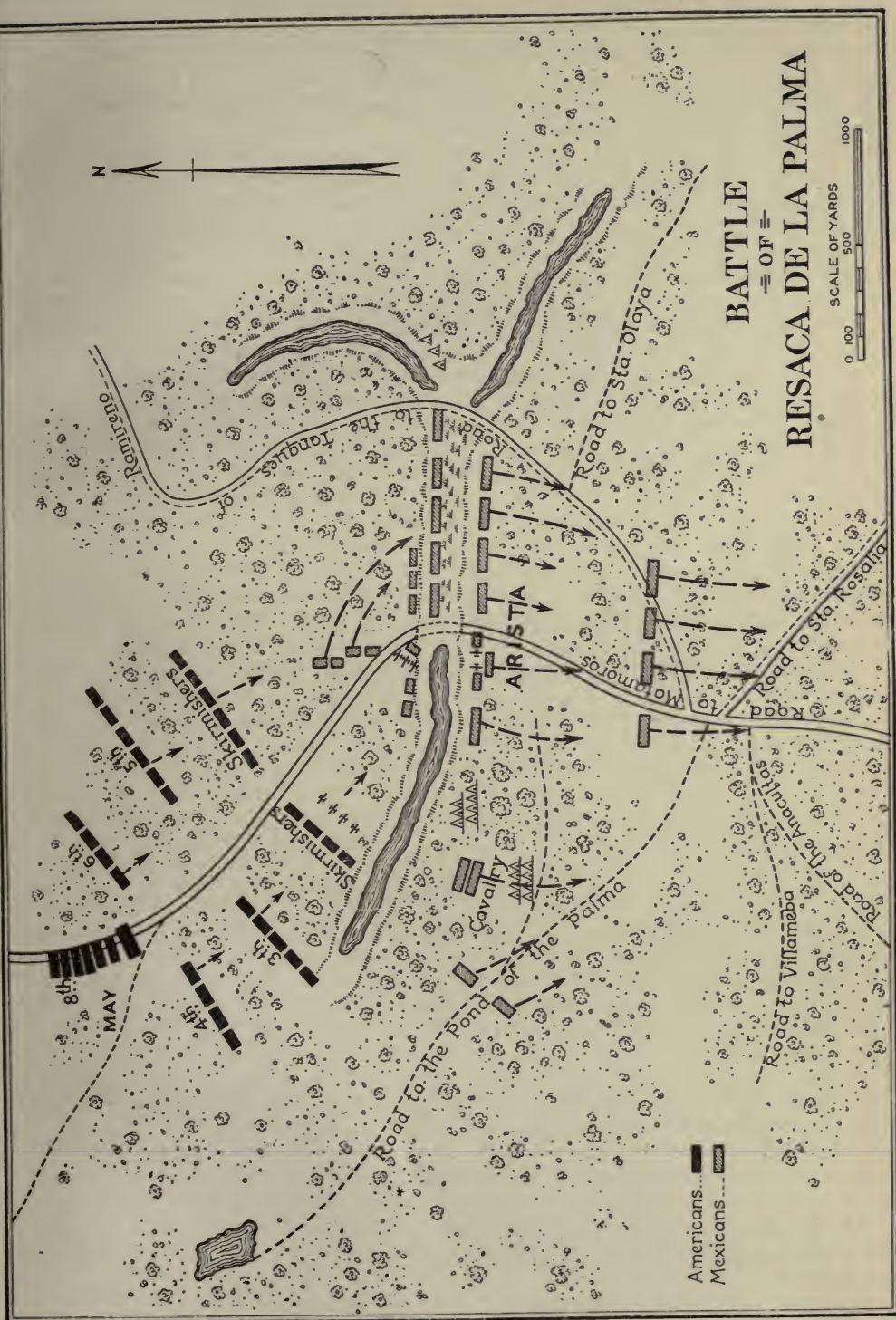


PLATE 18.—From History of the Mexican War by General Cadmus Wilcox.

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Mexican infantry, but the guns were soon retaken by American infantry. The action in the chaparral lasted for some time, but the Mexicans were finally routed. They dispersed and fled, never stopping till they had crossed the Rio Grande."

The losses of the Americans in the two engagements were 170 killed and wounded, and the estimated losses of the Mexicans, 1000. Arista's baggage and all sorts of plunder were abandoned to the Americans.

"The next day, May 10, the American Army was again assembled opposite Matamoras. Several days were spent by its commander in arranging with Commodore Connor, who commanded the American squadron at the mouth of the Rio Grande, for the proper defense of the American base at Point Isabel, and for the complete opening and holding of the river. May 18, Taylor crossed his army in boats and launches to the Mexican side, and took possession of Matamoras, without any resistance.

Arista had withdrawn his army toward Linares (Plate 17), 150 miles southwest, whence it could march promptly to Monterey or Victoria, according to the direction the enemy should take. Taylor started all of his cavalry, regular and volunteer, in pursuit on the 19th. It followed the enemy 60 or 70 miles, but was then forced to return by the lack of water for men and animals. After a march of great hardship, due to scarcity of food and water, Arista's dispirited army reached Linares on the 28th of May. Arista was relieved from command and ordered before a court-martial.

"The victories of Palo Alto and Resaca de la Palma gave the Americans control of the Rio Grande; but for lack of troops, especially cavalry, and more so for lack of land and water transportation, Taylor was unable to follow up the Mexican Army. He had made timely requisition for boats and wagons; yet, for want of them, his army had to lie idle for three months. He reestablished his camp opposite Matamoras."

"The Sierra Madre range was to be the new line of defense for the Mexicans, and Monterey was selected as General Taylor's first objective. (Plate 17.) Camargo was the natural place for his advanced or secondary base, because the road from that point to Monterey was shorter than that from any point farther down the Rio Grande; and, more important still, it lay in the valley of the San Juan River, where plenty of water and wood could be found. The depot at Camargo could be supplied by water transport from the base at Point Isabel, and the route all the way down the river was practicable for artillery and wagons on both banks."

The Battle of Monterey.

Toward the middle of August Taylor had his invading force gather together at Camargo. For lack of transportation he had been obliged to leave some 6000 volunteers at Fort Brown, but still had about 6000 men with him. He organized them into two divisions of regulars under Generals Worth and Twiggs, and one of volunteers under General Butler. He established another depot at Cerralvo, connected with Camargo by two roads, each about 75 miles long.

With its cavalry in advance, the American Army began its march from Camargo on August 19, the rear division, the volunteers, not leaving till September 6. By the 13th of September the entire army was concentrated at Cerralvo. The march was resumed on the 18th. The Mexican cavalry, which had now shown itself, fell back before the American squadrons, and, on the night of the 19th of September, the American Army bivouacked at Walnut Springs, three miles from Monterey.

The Mexican Army, now again commanded by General Ampudia, had anticipated the movement against Monterey, and had itself moved thither and prepared the town for defense.

Monterey is inclosed on the west and south by high ridges of the Sierra Madre through which the San Juan River breaks. (Plate 17.) The river here flows eastward and then turns toward the northeast. The town lies in the bend thus formed.

"The line of communication of the Mexican garrison was the Saltillo road, leading from the western side of the town. General Taylor's attack had for its main purpose to get possession of this road."

After severe fighting, in which the Americans captured one defensive position after another, on the 24th of September, "General Ampudia sent a note to Taylor proposing terms of surrender. The battle was, thereupon, suspended; and, after some hours of conference, terms were agreed upon. The terms were, briefly, the Mexican Army to retire, the infantry and cavalry carrying their arms . . . the artillery to retain one battery not to exceed six pieces . . . the Mexican flag, when struck at the citadel, to be saluted by its own battery."

"In addition, it was agreed that the Mexican armed forces should retire within seven days beyond the line Rinconado-Linares-San Fernando, and that the forces of the United States were not to advance beyond this same line before the expiration of eight weeks, or until the orders of the respective governments be received."

In this battle the aggregate strength of the American Army was 6650; that of the Mexicans about 10,000. The American losses were 488 killed and wounded. The Loss of the Mexicans is not accurately known.

"The Mexican Army retreated to San Luis Potosi (Plate 16) where General Santa Anna took command of it, and set about reorganizing it. Santa Anna, with the connivance of the American authorities, had lately returned from exile. He was immediately elected President of the republic and he personally conducted all the subsequent operations against the invaders of his country.

The administration at Washington disapproved the armistice granted at the surrender of Monterey, and ordered Taylor to resume hostilities at once. Accordingly General Worth's division was started forward on the 13th of November to take and hold Saltillo. The place was occupied without opposition.

Saltillo was strategically an important point. As we have seen, it was where the road to the capital passed from the mountains into the high central table-land (Plate 16); there, also, a road came in from Parras (Plate 17), a town a hundred miles farther west, where there was another American column, under General Wool. Parras was situated in a very fertile region, from which General Taylor could draw provisions for his troops. Furthermore, Saltillo was the capital of Coahuila, which gave it a political importance. General Taylor did not contemplate any farther advance toward the City of Mexico along this line.

The administration at Washington was desirous of having the state of Tamaulipas occupied as a means of making the Mexican Government and people want peace. Accordingly, the important port of Tampico (Plate 16), from which Santa Anna had withdrawn its garrison, was taken by Commodore Perry about the middle of November, and General Taylor marched an expedition from Monterey to Victoria, the capital of the state. A detachment under General Shields was sent down from the Rio Grande to garrison Tampico, and the port was afterwards used as a base for the fleet and army in the operations against Vera Cruz.

On the 4th of January, 1847, General Taylor was at Victoria with Twigg's division of regulars from Monterey and Patterson's division of volunteers, which had marched down from Camargo. A few days later Taylor received orders detaching from his command to General Scott's expedition against Mexico City, all of his regulars, except four batteries of artillery and two squadrons of dragoons, and all of his volunteers, except some 4000 at the front, and a few thousand guarding his line of communications. With so small a force Taylor could hope to do no more than hold the advanced position of Saltillo or Monterey.

Several small detachments sent forward by Wool to reconnoiter had been attacked, and some of them captured. To restore confidence among the volunteers, shaken by the late captures, Taylor moved the bulk of his little force, February 5, 18 miles farther south to Agua Nueva. (Plate 17.)

"Santa Anna got possession of General Scott's dispatch to Taylor detailing all the plans for the expedition against Vera Cruz, including the reduction of Taylor's forces; so Santa Anna resolved to march his army from San Luis Potosi to destroy Taylor's weak force." "The march (of 300 miles) was begun on the 28th of

January, and the troops suffered almost every hardship incident to campaigning. Before the end of the journey, the army had lost a fifth of its numbers by death, sickness, straggling and desertion. On the morning of February 21, May brought in the news that Santa Anna's army was advancing rapidly."

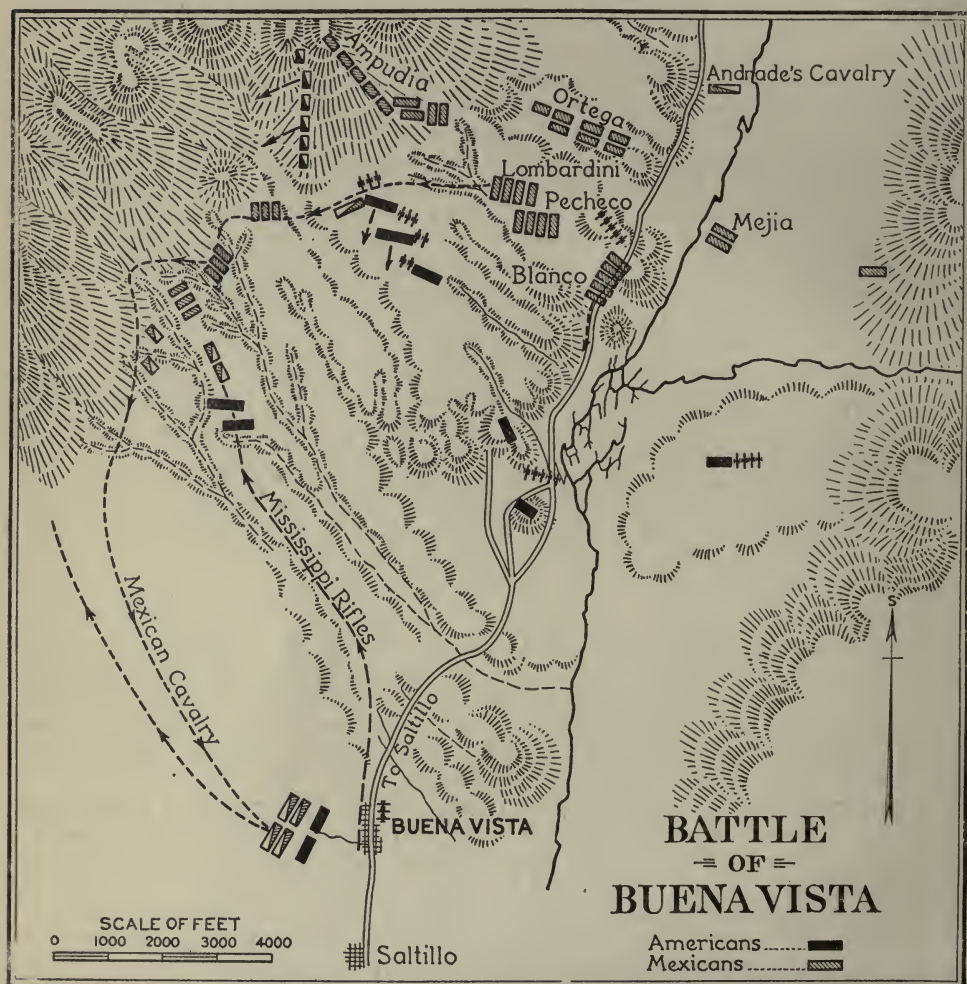


PLATE 19.—From History of the Mexican War by General Cadmus Wilcox.

Published by the Church News Publishing Company, Washington, D. C. Reproduced from American Campaigns by Major Matthew Forney Steele, U. S. Army. War Department Document No. 324.

The Battle of Buena Vista.

"Back on the road some 13 miles, near the hacienda of Buena Vista (Plate 17), was an excellent defensive position at the northern end of a narrow defile or angostura. Here Taylor resolved to stand for battle with the enemy. Leaving his volunteer cavalry as a rear-guard to forward the stores and burn such as it should not have time to move, Taylor withdrew at once to Buena Vista. As soon as Santa Anna learned of the withdrawal and the burning of stores, he was convinced that the Americans had begun a precipitate retreat. His chief concern was to overtake them and bring them to battle.

The road back to Buena Vista and Saltillo passed through the angostura. Along the western side of the road was a small stream flowing between banks 20 feet high and almost vertical. (Plate 19.) It could be crossed at a few points only. High

mountain ridges rose on each side of the defile. On the western side the space between the foot of the mountain slope and the stream was so cut up by deep gulches as to be impassable for any troops. On the eastern side, between the stream and the foot of the mountain, was a flat plateau 40 or 50 feet above the roadway, cut into narrow tables by ravines running from the foot of the mountain slope down to the valley of the stream. Most of the ravines could be crossed by infantry, but with difficulty.

It was on these narrow tables, and around the heads of the ravines, that the main part of the fighting at Buena Vista was done. One of the tables was from one to three thousand feet wide, and the point in which it terminated came down so close to the bank of the stream as barely to leave space wide enough for a wagon to pass. At this narrow point of the road five guns of Captain Washington's battery were placed behind an embankment. They were supported by the 3rd Indiana Regiment posted on a hill between the two branches of the road back of the defile. From there the American line of battle extended up the middle of this table some 3000 yards. Lieutenant O'Brien had the other three guns of Washington's battery at the left of the infantry line, and still farther to the left the volunteer cavalry and riflemen were guarding the flanks on the mountain slopes. Bragg's battery with a regiment of infantry took position on a table to the right (west) of the angostura.

Santa Anna's army came up the next day, February 22, and finding the Americans in position for battle made its dispositions for attack. General Ampudia, with a brigade of light troops, pushed out to the right of the Mexicans, and driving back the dismounted American cavalry and riflemen in that quarter, took up a position on the mountain side. Two divisions, Lombardini's and Pacheco's, were formed abreast of each other to the right (east) of the road, with Ortega's to their right and rear in reserve. Mejia's brigade got across the stream and took position to the left (west) of the road. Blanco's column formed in the road.

The Mexican Army was strong in cavalry. So General Minon's cavalry division had been detached to make a swift turning movement by the mountain roads to the east, in order to cut off the retreat of Taylor's army. The rest of the cavalry was in three bodies, one supporting each flank, and the reserve under Andrade behind the center of the line. The artillery was posted in two strong bodies behind the wings of the army. These were about the positions of the two hostile forces, when the battle opened in earnest, at dawn on the morning of February 23.

Fearful of the capture of his supplies by Minon's cavalry, Taylor, taking Jefferson Davis' regiment of Mississippi rifles and May's squadron of dragoons, went back to Saltillo, six miles away, on the evening of the 22nd, and was there when the battle began at dawn on the 23rd.

Ampudia opened the fight on the extreme left of the American position; his purpose was to turn that flank. Soon the divisions of Lombardini and Pacheco advanced against the American left flank, and Blanco's moved by the road against the right. This division soon came under such destructive fire from the batteries of Washington and Bragg, and their supports, that it was ordered by Santa Anna to halt under shelter of the ground. Mejia's brigade crossed to the east of the road. Pacheco's division, composed of recruits, almost immediately broke and fled from the field, but the rest of the Mexican forces pushed forward.

An Indiana regiment supporting O'Brien's guns was the first part of the American line to break; and soon the whole line was forced back. Finally, the American left was turned and the Mexican cavalry was in pursuit of the fleeing regiments. At this crisis Taylor returned from Saltillo with May's cavalry and all but two companies of Davis' rifles. This regiment was deployed to the left of Buena Vista, and with reinforcements that were hastened to it, it succeeded in checking the enveloping Mexicans. But the battle kept up till dark.

The Americans were so greatly outnumbered by the Mexicans, and they had to defend a position so much too extensive for their strength, that their regiments, batteries, and squadrons were kept shifting their positions all day long. They would be driven back from one point, only to reform and take up a new position.

Bragg's battery was posted first on the right flank, then it had to be withdrawn and sent to the hacienda. Later on it went into position in support of Davis' rifles, and wherever else it could do the most good. And so with the other batteries.

Finally, the Mexican reserve, Ortega's division, advanced upon the broad plateau, along which the main position of the Americans had rested in the morning. American troops were hurried to this quarter from other parts of the field as quickly as possible. As last Bragg's battery, General Taylor states in his report, "without infantry to support it, and at the imminent risk of losing its guns, came rapidly into action, the Mexican line being but a few yards from the muzzles of the pieces. The first discharge of canister caused the enemy to hesitate, the second and third drove him back in disorder and saved the day."

This ended the battle. The Mexicans withdrew from the field and fell back to Agua Nueva. Meanwhile, Minon's cavalry had attacked at Saltillo, but had been driven off by the guard of mixed troops at that point.

"In the battle of Buena Vista the strength of General Taylor's army was 4757 and 16 guns. All the troops were volunteers, except the artillery and two squadrons of dragoons. The American loss in the two days' engagement was 756, of which number 267 were killed, 456 wounded and 23 missing."

Santa Anna started from San Luis Potosi with some 18,000 rank and file, but the hardships of his long march had been such that it is probable he had no more than 14,000 to put into the battle. His loss was 1500 to 2000 men, 294 of whom were prisoners.

General Taylor was in no condition, of course, to pursue Santa Anna's army. "He fell back to Monterey," says Wilcox, "where he remained for some months keeping open communications with the Rio Grande, superintending the forwarding of troops to reinforce Scott, and gaining the encomiums of the Mexican authorities by his wise and conciliatory civil administration."

"In all the annals of American warfare, no other such victory as that of Buena Vista can be pointed out. Upon ground unprepared for defense, with its left flank practically in the air—the space was so much too wide for the force defending it that the heights on the left could not be properly guarded—this little body of well-trained volunteers successfully resisted from daylight till dark the assaults of an enemy of three times its own strength; and at last repulsed him and kept the field.

General Taylor risked a great deal at the battle of Buena Vista. The chances of victory appeared very slender, and the consequences of defeat would have been very serious for the United States. General Wilcox says in his history of the Mexican War: 'Had Santa Anna been successful at Buena Vista there is hardly a doubt, under the excitement that would have prevailed in Washington, that a garrison would have been left at Vera Cruz to run the gauntlet of the vomito (yellow fever), General Scott with his remaining forces ordered to the Rio Grande, and the war prolonged another year.' While we do not believe Santa Anna would have 'taken and sacked New Orleans,' as he boasted he would, or even that he would ever have got across the Rio Grande, he might have thrown the Americans back to that line, and set the war back where it was nearly a year before, with the best general the Mexicans had and the prestige of victory on the Mexican side.

If Taylor's army had fallen back to Monterey, or farther, without making a decisive stand, it is hard to say what might have been the outcome. If in such a case Santa Anna had continued to pursue, and could have been long enough detained in the north, it would have made General Scott's advance against the capital easier.

Never has the advantage of drill and training and discipline under educated officers been better exemplified than in the battles of this campaign. In the battles of Palo Alto and Resaca de la Palma, the American soldiers were all trained regulars. In the battle of Buena Vista, they were all volunteers except the artillery and two squadrons of dragoons. It is true that this victory could not have been won without the regular batteries which did such fine work, but with the exception of one or two regiments, no troops ever fought better than those volunteers. But they had all been in camp at Fort Brown and Camargo drilling, and in campaign serving

with regular troops, for nearly a year ; and in this battle, the regiments that acquitted themselves the best were under officers, like Colonel Jefferson Davis and Henry Clay, Jr., 'who had received military training in the regular army.' Without question the best purpose of our small standing army in time of peace, is to educate officers, and it is to be regretted, as has been pointed out by an American general, that more of the wealthy young men of the country do not seek commissions in the army, and serve with it a term of years merely to fit themselves to command troops in case of war. There is no difference between American volunteers and American regulars—they are both volunteers ; but there is a difference between trained soldiers and untrained soldiers ; between discipline and undiscipline ; between a knowledge of how to take care of one's self in campaign and a lack of knowledge ; between soldiers rightly trained and soldiers wrongly trained."

TENTH LESSON.

THE WAR WITH MEXICO—SCOTT'S CAMPAIGN.

(Based Upon "American Campaigns" by Steele.)

General Scott's Campaign.

"From the opening of hostilities with Mexico in the spring of 1846, Major General Winfield Scott, commanding general of the United States Army, had asked to be allowed to command the forces in the field in Mexico. But not until November, 1846, after the news had reached Washington that Ampudia had surrendered to General Taylor at Monterey, did President Polk, after much vacillation and with much reluctance, give his consent for General Scott to go to Mexico to conduct a campaign in person."

Plan.

"General Scott's plan was to capture Vera Cruz, and, with this port as his base, to march his army to the City of Mexico. (Plate 16.) Fifteen thousand troops he estimated to be the smallest number with which he could hope for success in such a campaign, 5000 of which must be regulars. To make up his army, he took from General Taylor 4000 regular and 4000 volunteer infantry, two light batteries, 500 regular and 500 volunteer cavalry. This left Taylor with a command of only some 7000 men, with which he was expected to act strictly on the defensive. The rest of the complement of 15,000 troops that General Scott counted upon, were to be volunteers raised immediately in the states. Congress, however, failed to authorize these volunteers until the end of February, 1847.

"Owing to the recurrence of yellow fever on the coast of Mexico, Scott felt that he must be at Vera Cruz with his army by the 1st of February ; and he made all of his plans accordingly. He arranged with Commodore Connor, who commanded the American fleet in Mexican waters, for his cooperation ; he submitted, in full time, requisitions for transports, lighters, land transportation, siege trains, and everything that he should need ; he selected the Island of Lobos as the place where he should assemble his army.

"There were all sorts of delays, for which Scott was in no way to blame ; and the end of February was at hand. Only 13,000 troops were present, and there was a shortage of transports, lighters, and all material. But the expedition could not wait ; if it were delayed any longer, it would have to be put off till the next fall or winter."

Operations.

"On the 2nd of March, the order was given to weigh anchor at Lobos ; and by the 7th, the fleet had cast anchor again at Anton Lizardo, 18 miles southeast of Vera Cruz." (Plate 17.) "Scott was at this time ignorant of the movement of General Santa Anna toward Monterey, and expected on landing or attempting to land, to be met by a formidable force of the enemy," so every precaution was taken. (Plate 20.) "Having selected the place for landing, well without the range of



PLATE 20.

Reprinted by special permission from General Scott.
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guns in the city and the castle of San Juan de Ulloa, he had the fleet moved up on the 9th of March, and anchored in front of it. The naval guns shelled the beach, and the sand hills beyond, and the sailors landed the troops with surf-boats. No Mexican troops appeared, and by 10 p. m. the entire force had landed without an accident.

"A complete line of investment was immediately established, extending from shore to shore on either side of Vera Cruz; and batteries were set up to shell the city. Owing to delay in getting the siege material ashore, the batteries were not ready to begin work until the afternoon of the 22nd (March). General Scott then called upon the Mexican commander to surrender the town and the fort (San Juan de Ulloa). The Mexican commander declined to surrender, and the batteries opened fire. The guns of the town and fort returned the fire. The bombardment was kept up until the 26th, when Scott received a proposal of surrender from the Mexican commander; terms were agreed upon the next day. The city and fort, 5000 prisoners, and 400 guns were turned over to the Americans. General Scott's loss was 67 killed and wounded.

"In this investment the navy not only bombarded the enemy's works from the seas, but also set up a battery in line on land, which did effective work. During the siege the only interference with the Americans from the outside, was occasioned by a considerable cavalry force, which hovered around, and had to be chased away two or three times."

Geography.

(Plate 21.) "From Vera Cruz two roads led westward across the Tierra Caliente, up through the mountains, to the plateau of Anahuac, as the great interior table-land is called, and on, to the Valley of Mexico, and the capital city at the lowest point of this bowl-shaped valley. The two roads, however, came together at El Pinal, east of Puebla. The northernmost of these roads passed through the towns of Jalapa, Perote, and Puebla, and was almost the identical route that Cortez took in 1519. This road was, in 1847, the main post road, the better of the two, and, therefore, the one selected by General Scott. The other road passed through Orizaba. The French followed this road in their invasion of Mexico in 1863.

"The road chosen crossed the Tierra Caliente to the foot-hills at Plan del Rio, about 30 miles from Vera Cruz. There it began the ascent of the mountains to the great plateau; thence it led on to the City of Mexico, more than 200 miles from Vera Cruz. Many strong defensive positions there were between the Plan del Rio and Valley of Mexico.

"As far as Jalapa the road lay in the Tierra Caliente; but from there on, to the capital, the country crossed possessed as fine a climate for campaigning as any in the world; but there was a scarcity of water from Jalapa to the Valley of Mexico. Toward the Valley of Mexico, the country became more fertile and thickly settled, and subsistence supplies in abundance could be obtained for an army.

"The topography was of such character much of the way from Vera Cruz to the capital that troops could march only on the roads. In the Tierra Caliente there was high grass and dense vegetation; over the mountains the road was shut in the passes; in the Valley of Mexico all roads rested upon causeways.

"There were five lakes in the Valley of Mexico, the remains of a single large ancient lake which had been gradually drying up for ages. Lake Chalco, which existed at the time of Scott's campaign, is dry to-day. There were no impassable rivers between Vera Cruz and Mexico, behind which an army could take a defensive position. The chief natural obstacles in Scott's way were the mountains with their impassable heights and gorges, and the lakes and marshes around the capital city."

Operations After Vera Cruz.

"After the fall of Vera Cruz the army was still short of transportation. Several expeditions were, therefore, sent out into the interior for the purpose of finding markets in which to purchase horses and mules. By this means General Scott eked

out his transportation enough to enable him to start his army on the road to the interior before the return of yellow fever.

(Plate 16.) "After his defeat at Buena Vista (February 22-23) Santa Anna fell back with his army to San Luis Potosi, where he arrived after a march of great hardship with less than 10,000 effectives. After resting here four days, he resumed the march to the capital with two brigades.

"A new revolution had meantime broken out in the City of Mexico, and when Santa Anna arrived there, he found armed partisans confronting each other in the streets. (Plate 21.) He managed to compose the dissensions, and on the 2nd of April set out for Cerro Gordo, a strong position on the road to Vera Cruz, where he purposed stopping the progress of Scott's Army. A part of the troops he had commanded at Buena Vista, some 5600, had already turned toward the same point, the rest remained for the present at San Luis Potosi. From the capital Santa Anna took the National Guards of that city. Cerro Gordo (Big or Fat Hill) is on the Jalapa-Vera Cruz road, some 20 or 25 miles east of Jalapa at the foot of the Sierra Madre—the last step from the great plateau of Anahuac to the Tierra Caliente.

(Plate 22.) "Here the road from Vera Cruz crosses a small river and a narrow stretch of level ground, the Plan del Rio; then it zig-zags upwards and to the west, following the easiest grade from one bench to the next. To the right of the road, as one goes west, are first rugged cliffs and then an impassable ravine. Between the ravine and the road are two prominent wooded knolls, Atalaya and Telegrafo, a few hundred yards beyond which the road passes the Cerro Gordo Ranch. From the Plan del Rio to this ranch, and probably farther westward, the stream flows in an impassable gorge; and about midway of the distance is a commanding table. On this table the right of the Mexican line rested. The left was on Telegrafo, and the reserve was at the ranch."

The position as occupied was strengthened with parapets, trenches, palisades, and abatis; and the trees were cleared away from the field of fire in front. Artillery was so placed as to command the road and sweep all the approaches to the position.

"Owing to the ferocious heat and deep sand, the march of Scott's army across the Tierra Caliente, from Vera Cruz to Plan del Rio, was very hard and trying. Twiggs' division, which started on the 8th of April, did not reach Plan del Rio until the evening of the 11th. Twiggs had been informed on the way that Santa Anna was at Jalapa with troops, and he expected to meet him at Cerro Gordo.

"As soon as General Scott received report that the divisions of Twiggs and Patterson had found the enemy in force at Cerro Gordo, he hastened forward from Vera Cruz himself, and joined the troops at the front on April 14. Having gotten more transportation, General Worth, also, marched his division forward, and had reached the camp of the other divisions at Plan del Rio, by the evening of April 17.

"Meantime the American engineer officers had been reconnoitering the Mexican position. They reported that the position, though fortified and very strong in front, could be turned by its left and struck in rear; and that the intrenchments on Telegrafo could be carried by assault. Telegrafo was the key to the position.

"On the 17th Twiggs' division followed the route picked out by the engineers; and, after an action in which it lost 97 officers and men, it got possession of Atalaya. General Scott thereupon issued an order for a general attack, for the morning of the 18th. Worth's division of regulars with Schield's brigade of volunteers, was to follow up and support the 'main attack' against the Mexican left and rear; and Pillows' brigade of volunteers was to make the 'secondary attack' against the front.

"The main attack carried Telegrafo, put the left of the Mexican line to flight, and got possession of the Jalapa road. Seeing escape impossible, the entire right of the Mexican line then surrendered. The American cavalry pursued the routed Mexicans, but was not fleet enough to do them much damage.

"General Scott reported his strength at this battle as 8500, and his killed and wounded, 33 officers and 398 enlisted men. He estimated the Mexican strength at 12,000 and the losses 1000 to 1200 killed and wounded and 3000 captured. The

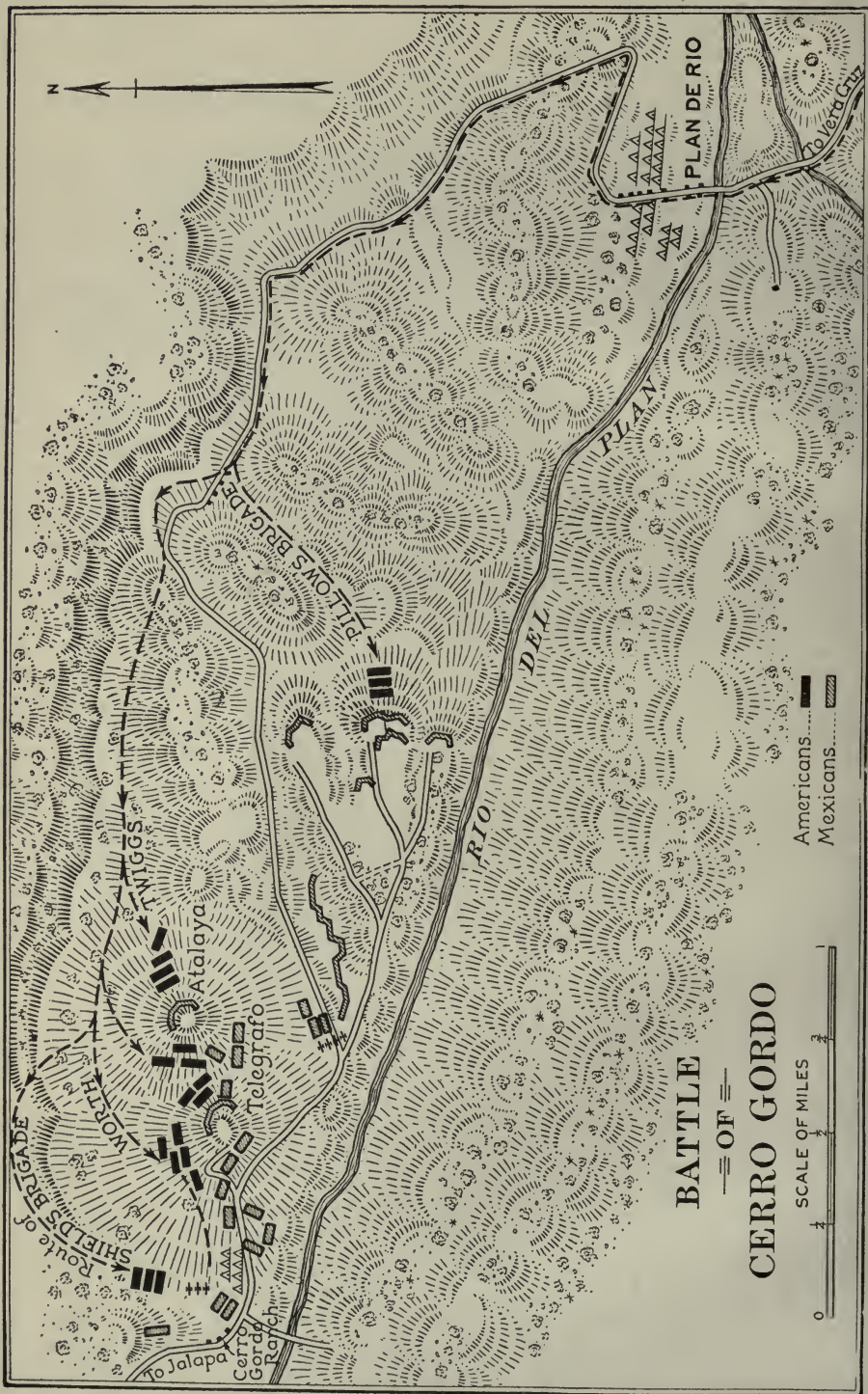


PLATE 22.—From History of the Mexican Wars by General Cadmus Wilcox.
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prisoners, like those taken at Vera Cruz, were, for lack of means to care for them, paroled.

"Without delay the American Army moved to Jalapa. Here, on April 27, Scott received word that the reinforcements intended for him had been diverted to Taylor on the Rio Grande frontier, by order of the War Department. The term of the one-year volunteers had nearly expired; they were clamoring to be discharged in order to be able to pass through the Tierra Caliente before the return of yellow fever. As General Scott knew that he could not complete his campaign before their term would expire, he had nothing to do but to wait for reinforcements, so he discharged the one-year volunteers at Jalapa on the 4th of May and let them go home.

"With the remainder of his army, Scott resumed the march to Puebla.

"The American Army remained at this place three months, awaiting reinforcements. Its numbers fell as low as 5820 effectives. At last reinforcements were received sufficient to raise the aggregate to 12,776 men, of whom more than 3000 were sick. The army was now organized into two regular divisions under Worth and Twiggs, and two volunteer divisions under Pillow and Quitman.

"It was known that another Mexican Army had in the meantime been organized to defend the capital city. This army was believed to be 30,000 strong; it actually numbered not more than 20,000. Scott's army was now 150 or more miles from Vera Cruz, and the road was beset by guerrillas. With so small a force Scott could not proceed farther and, at the same time, guard so long a line of communication. (Plate 21.) Abandoning his communications, therefore—cutting loose from his base—and leaving his sick and convalescent at Puebla, he resumed the march for the City of Mexico on the 7th of August; by the 12th his leading division, without encountering any serious resistance, had arrived at Ayotla in the Valley of Mexico.

"After the authorities at the Mexican capital became convinced that General Scott was going to continue his advance on that city, and that there was no longer any hope of checking him on the way, they displayed great energy in preparing for the defense of the city. The foundries and powder-mills were worked to their utmost capacity in the manufacture of arms and powder; the part of the Army of the North which had remained at San Luis Potosi to watch for the Americans in that direction, was now ordered to Guadalupe; the various states were asked for troops, but only a few responded; the best men of all ages and classes of the capital enrolled themselves in the ranks of the National Guard; and field works were built covering all the approaches to the southern side of the city.

(Plate 23.) "The main road from Ayotla lay between the foot of the strongly fortified hill, El Penon, and Lake Texcuco. The roads around Lake Texcuco, which enter the city from the north, were not reconnoitered, probably not considered on account of their length and roundabout direction. The way around the south side of Lakes Chalco and Xochimilco was, at first, supposed to be impracticable; but by reconnaissance it was later found to be practicable. This route had the advantage of passing through ground firm enough for troops to maneuver upon, but, at the same time, very rocky and rugged.

"Reversing the order of march therefore, Worth's division, which had been in rear, was started, on the 15th of August, by this southern road for San Augustin. Twiggs' division, which had been in the lead, and was camped at Ayotla, was held there for a time, in order to keep up the appearance of an advance by way of El Penon. The Mexicans, however, gained a knowledge of the movement on the 16th (August); and on the 17th the bulk of the National Guards at El Penon, and Valencia's Army of the North at Texcuco, were withdrawn. The National Guards were placed at Churubusco; on the 19th two of their battalions advanced to San Antonio. Valencia marched first to San Angel, and then, contrary to Santa Anna's orders, put his command into an isolated position upon an open ridge just north of Contreras and west of the southern end of the Pedregal, a large space covered with volcanic rocks. He placed a part of his troops, also, several hundred yards in front of his main position at the ranch of Padierna. Valencia was planning to fall upon the flank and rear of the Americans, as they moved on the capital by way of San Antonio.

OPERATIONS OF THE AMERICAN ARMY — IN THE — VALLEY OF MEXICO

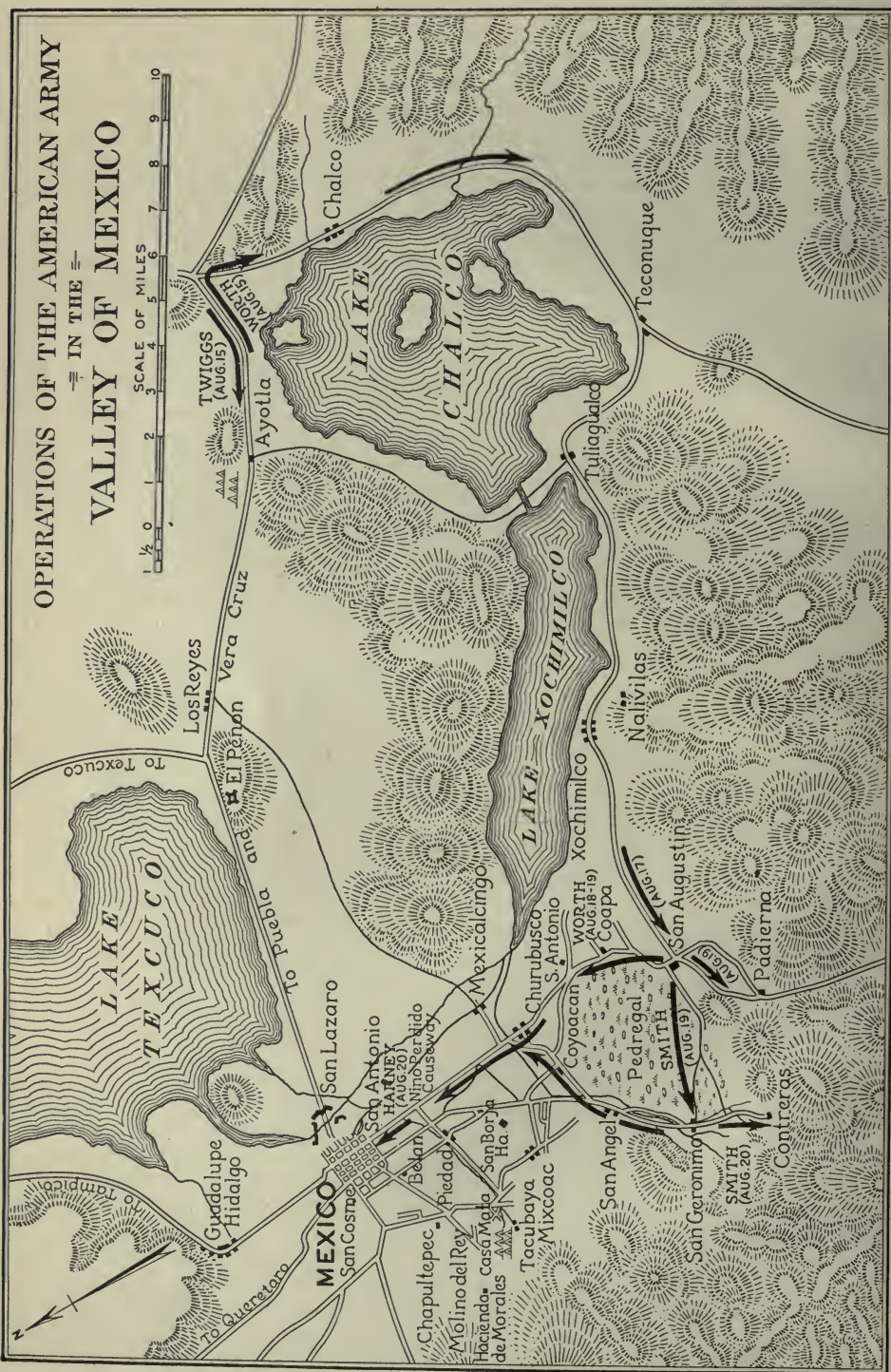
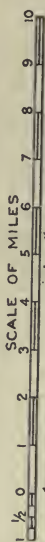


PLATE 23.

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"The American Army reached San Augustin on the 17th of August, and occupied it without serious opposition. The engineers discovered the position of Valencia's army; they also ascertained by reconnaissance that a road could be made over the Pedregal, by which Valencia's position could be turned, his rear attacked, and his line of retreat to the main army and the capital cut off.

"On the 18th of August Worth's division moved forward to San Antonio, and on the 19th masked that place. On this day the divisions of Twiggs and Pillow advanced against Valencia's position. While part of this force attacked and captured the advanced post at Padierna, driving back the enemy from there, three brigades, under General Persifor F. Smith, made their way across the Pedregal to the wood around San Geronimo, less than 2000 yards to the left and rear of Valencia's main position.

"During the night General Scott sent Shield's brigade to reinforce Smith. Santa Anna sent an order to Valencia directing him to withdraw to Coyoacan. Valencia refused to obey the order, and held his position.

"Leaving Shields to hold San Geronimo, protect his rear, and cut off the enemy's retreat, Smith moved forward the rest of his detachment before daybreak on the 20th, and fell upon the rear of Valencia's position. Scott had ordered Worth and Quitman to support this attack by assaulting the front of the position. This 'secondary attack' was quite unnecessary, for Smith's assault took the enemy by surprise and put him to flight. The victory was complete.

"In this engagement which the Americans call the battle of Contreras, and the Mexicans call the battle of Padierna, the Americans engaged numbered 4500; the Mexicans 4000. The Americans lost fewer than 100 men; the Mexicans lost 700 killed and 813 prisoners.

"Referring to the work of this 20th of August, General Scott says in his report: 'After so many victories, we might with but little additional loss have occupied the capital the same evening.' But he thought the attainment of peace would be favored by his remaining outside of the capital for the present, and granting an armistice until terms of peace could be considered by Mr. Twist, American peace commissioner accompanying his army, and representatives of the Mexican Government. The Mexican account confirms General Scott's opinion of the American successes.

"On the 23rd of August an armistice was agreed to, which 'was to continue as long as the commissioners of the two governments should be engaged in negotiations; or until the commander of either army should give formal notice to the other of its cessation,' and 48 hours thereafter.

"General Scott established his headquarters, with Worth's division at Tacubaya; Quitman's division remained at San Augustin, Twiggs' at San Angel, and Pillows' at Mixcoac. The head and tail of the army were within eight miles of each other.

"The peace commissioners came to no agreement, and the Mexican Army had violated several of the terms of the armistice. So, on September 6, Scott notified the Mexican commander that the armistice would cease. On the 8th of September the army closed up. Quitman moved up to Coyoacan from San Augustin; one of Twiggs' brigades took post on the Nino Perdido causeway, to threaten the city in that direction; one of Pillow's brigades occupied the San Borja hacienda, the other joined Worth at Tacubaya, and took part in the battle of Molino del Rey, fought that day. Mixcoac was to be the general depot. All the southern and western garitas (gates) of the city were strongly fortified, and defended by artillery; and outside of the city there were strong garrisons and defensive works at the Castle of Chapultepec, Molino del Rey, and Casa de Mata. Santa Anna's cavalry, 4000 strong, was at the hacienda of Morsles, two miles west of Chapultepec.

(Plate 24.) "The Molino del Rey consisted of a huge pile of stone buildings, 200 yards long, in a part of which cannon and powder had formerly been made. Some 300 yards west of it was a four-sided bastioned fort, inside of which was the Casa de Mata, a large building used for the storage of powder. Southward the ground rose in a gentle slope to Tacubaya, and a short distance west there was a deep ravine. 'The well-fortified castle of Chapultepec,' the national military

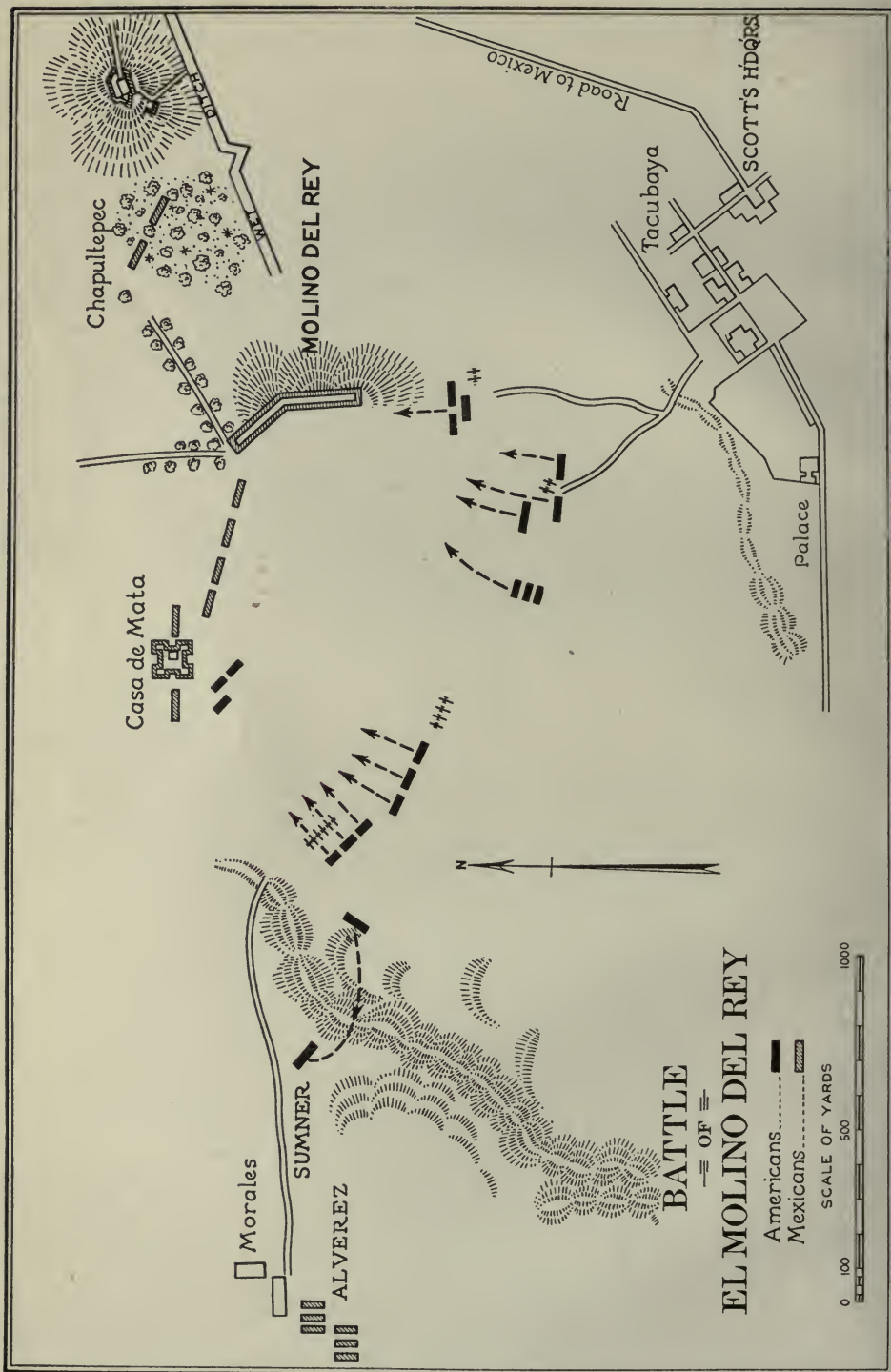


PLATE 24.—From History of the Mexican Wars by General Cadmus Wilcox.

Published by the Church News Publishing Co., Washington D. C. Reproduced from American Campaigns by J. M. Smith, 1875.

academy, 'on a height in rear, commanded these buildings and the ground beyond, toward Tacubaya.'

"General Scott had received a credible report that there was a cannon foundry in the Molino del Rey, and a large quantity of powder in the Casa Mata. He determined, therefore, to attack and destroy the buildings, and assigned the task to General Worth with his own division, one of Pillow's brigades, 270 horsemen under Major Sumner, and five guns. The assault was set for the morning of September 8.

"Santa Anna got possession of General Scott's order for this attack, and spent the 7th in arranging to meet it. He placed five brigades of infantry with artillery in and about the buildings to receive the assault, and stationed his cavalry, 4000 horsemen, under General Alvarez, in position to charge the flank and rear of the assaulting columns and destroy them. At the first light of day the American guns opened on the buildings, and the assaulting columns soon moved out. The battle lasted two hours, at the end of which the Americans stood in possession of the buildings. The defenders that escaped death and capture took refuge under the guns of Chapultepec. Eight hundred were taken prisoners. Worth had only 3100 men; he lost 116 killed and 671 wounded. There must have been 14,000 Mexican troops in the engagement, or within supporting distance, but they lacked a single directing head; Santa Anna was in the city, and there was no single commander directing the defense. It was one of the most remarkable victories ever gained by American troops, but the percentage of their loss was frightful. Santa Anna published a proclamation and sent it abroad in the land, announcing that the Mexicans had gained the victory, and that he had led them in person.

"During the engagement General Alvarez and his cavalry sat idle in their saddles. He claimed to be unable to cross the ravine between him and Worth's assaulting columns. Sumner led his little band of American horsemen across the same ravine to the side of Alvarez; they were not charged by the Mexican cavalry. Alvarez was probably kept at bay by the American artillery.

"Chapultepec was the next stronghold to be attacked. This stone castle stands on 'an isolated mound rising 150 feet above the valley; nearly precipitous on the northern, eastern, and part of the southern side, it declines gradually on the west to a cypress grove separating it from Molino del Rey.' The grounds were inclosed by a high wall on the southern side, and on the northern side by the San Cosme Aqueduct. The castle commanded two of the causeways leading into the City of Mexico about two miles east of it. The position was defended with cannon.

"Batteries were placed, and they shelled the fortress of Chapultepec all day of the 12th of September. The bombardment was resumed on the morning of the 13th, followed by 'two columns of attack, one led by Quitman against the southern face of the castle, advancing along the road leading from Tacubaya; the other under General Pillow' from Molino del Rey through the cypress grove, against the western side. Each division was accompanied by a storming party some 250 strong, with ladders and pick-axes and crow-bars. The assault was successful, and the commander of the stronghold surrendered after a gallant defense, in which the young cadets of the Mexican National Military Academy bore a conspicuous part.

"About 7500 Americans took part in the attack of Chapultepec. The Mexicans claim they had only 800 muskets in the grounds; but from the outside they had some 4000 infantry aiding the defense, and the same number of cavalry. This infantry, however, did very little, and the cavalry nothing whatever.

"The pursuit, with a short pause at Chapultepec, was pressed vigorously on the two causeways leading into the city. The more direct of these, the one followed by Quitman, led to the Garita de Belen about two miles distant. Worth (who had supported Pillow) advanced over the other and longer, which entered the city through the San Cosme Garita. These roads were broad, level avenues. In the center of each was an aqueduct consisting of an open stone trough, resting upon arches springing from stone piers, and right and left of the causeways were ditches filled with water.

"The columns on both roads met with stout resistance; but neither was stopped till it had entered the capital. Quitman's column passed the Belen Garita at 1.20 p. m., and pushed a short way into the city; but the fire from the houses and streets was so severe, the column was driven back to the gate, and remained there during the night. Worth passed the San Cosme Garita and halted in front of the convent of San Fernando for the night.

"During the night the city was evacuated by Mexican troops, Santa Anna went to Guadalupe. At dawn of the 14th of September a white flag was sent from the Citadel to the Belen Gate, the bearers of which requested General Quitman to take possession. Thereupon Quitman marched his command to the Grand Plaza. About 8.00 a. m. General Scott, accompanied by his staff and an escort of cavalry, rode into the Plaza. He appointed General Quitman military governor of the City of Mexico.

"A provisional government was established" by General Scott and "expeditions were sent against numerous guerrilla bands which still carried on their operations in rear of the army. In all these expeditions, the Americans were successful; but in many severe losses were incurred.

"Scott's campaign was over; but it was not until February 2, 1848, that the treaty of peace was concluded at Guadalupe Hidalgo. Ratifications were exchanged at Queretaro, May 30, 1848; peace was proclaimed July 4, 1848; and on August 1 the last American soldier quit Vera Cruz."

Comment.

"By the victory of Cerro Gordo the road to the Mexican capital was opened to the American Army, and Santa Anna's army was so badly routed, demoralized, and dispersed that, had General Scott been provided with the requisite force and transportation, he might have pushed on to the capital and speedily terminated the war. But with the discharge of seven regiments (the one-year men) at Jalapa, and with no reinforcements, Scott was forced to wait with his army three months at Puebla.

"For General Scott to cut loose from his base, abandon his line of communication with Vera Cruz, and set out with an army of 10,000 soldiers from Puebla to try to overcome an army of 30,000 and capture the capital, seems like a very hazardous undertaking. When the news of it reached Europe, Wellington said, 'Scott is lost. He has been carried away by success. He can't take the city, and he can't fall back upon his base.' It is seldom that a commander is justified in taking such a risk, and if General Scott had failed, military critics would have condemned him for rashness. General Wilcox says in his history of the war: 'The defeat of Santa Anna and the capture of the Mexican capital were due to Scott's skill and good judgment, aided by an able, educated and scientific staff, and by an infantry, artillery, and cavalry force whose fighting qualities are rarely equalled.'

"A distinctive feature of this campaign was the work of the younger engineer officers, Lee, Beauregard, Tower, Mason, McClellan, and others, in reconnoitering routes and positions, selecting the places for lines and guns, constructing batteries, guiding columns of troops, and watching for vulnerable points in the enemy's line. General Scott placed great reliance upon these officers. Not a route was taken, nor an attack ordered, until they had made their reconnaissance and report. The only attack made in the campaign without reconnaissance beforehand by the engineer officers, was Worth's impetuous assault of the bridge-head at Churubusco. Truly did the Military Academy *repay its cost to the nation with the work of these young graduates in this single campaign.*

"General Scott was greatly handicapped in the carrying out of his campaign by a lack of funds and supplies, as well as by the delay and scarcity of his reinforcements. During his long, enforced wait at Puebla, no funds nor supplies had been received. Four months' pay was due his troops. Mexicans were employed to make shoes and clothing for the army, and food and forage had to be got from the country; the subsistence and quartermaster's departments had to make all purchases on credit.

"This campaign, like Taylor's, exemplified the benefits and importance of *drill, discipline and training*. Advantage was taken of the long stay at Puebla, and wherever opportunity offered, for *instruction* in these matters."

ELEVENTH LESSON.

THE CIVIL WAR—PART I.

For the student of military history the great, outstanding lesson of the war with Mexico is the demonstrated ability of the American soldier *when he has been given an opportunity to acquire skill and discipline through training*. The battle of Buena Vista will ever stand a monument to America's military valor. The very name of the place where the battle was fought was prophetic of a vista equally glorious for a people who could see the light of the lesson there taught. At Bunker Hill and Harlem Heights the untrained American volunteer withstood successive assaults by British regular troops. At the battle of New Orleans, at the end of the War of 1812 they performed the same feat with even more spectacular results. In all three cases the Americans were firmly intrenched and were able to deliver their deadly rifle fire over the protecting parapet of earth, logs or cotton bales as the case was. But there, at Buena Vista, in the open field, surrounded by a numerically superior enemy whose whole-hearted desire was to destroy them, who had the advantage of commanding ground and the double advantage of being able to maneuver around the circumference of the battlefield; the American volunteer soldier, *physically hardened, conscious of his ability* to take care of himself and *with firm faith in his leaders* (the result of months of training and association), performed a feat of arms, which should forever silence the proponents of "military unpreparedness." If it was less spectacular from the popular point of view of human interest, it has also received far less appreciation from the American people than it richly deserves. Had Buena Vista been fought on American soil, had it been a battle in defense of our native land instead of an incident in a war of conquest in which the American public was not particularly interested, there can be no doubt that our historians would have seized upon it to exalt our national pride.

From the battlefields of Resaca de la Palma, Buena Vista, and Cerro Gordo we turn with pride and a well-justified anticipation to the opening scenes of the next great war in which the military man-power resources of America were called forth to vindicate the lessons that had been learned through so many years of costly experience in adherence to what the student by now understands to be our "*traditional military policy*."

Were the records of 1861 unknown to us; were this all a new story; were we aware only of the past; if our knowledge of American history were terminated with the close of the Mexican War what, then, should we justly and reasonably expect of the United States Government in the form of a military policy in its subsequent provisions for the *national defense*?

We cannot erase the indelible facts of history. The wise nation, as the wise man, will take the lessons of experience and from them extract the principles that reason shows to be the guiding rules for its conduct. What would we say of a man who was to insist upon repeating in a second business venture the acts which formerly led him to the brink of bankruptcy? Can we approve the conduct of a merchant who, having once been rescued from the clutches of the usurer by a good friend and, having upon another occasion barely escaped that same fate through fortunate circumstances, persistently ignored the logical inferences of his past experience and pursues his reckless course, trusting that *luck* would continue to be the mistress of his fortune?

Let us now turn to the opening chapter of the Civil War and see to what extent the lessons of the past were applied to the battlefields of 1861.

General Upton, in his "*Military Policy of the United States*," gives us the following account of the conditions which brought about the Battle of Bull Run:

"The acceptance before the 1st of July of more than 200,000 volunteers for the term of three years, did not deliver the Government from the temptation of again testing the folly of *short enlistments*."

"Mistaking *numbers* for *strength*, and forgetting, too, that the fame of the militia at Bunker Hill and New Orleans was acquired *behind formidable entrenchments*, Congress and the Cabinet, the press and the people, united in demanding that before their discharge the 75,000 *three-months' men* should be *led into battle*."

"The disaster that ensued demands that the causes leading to it be carefully considered. First among them was the popular but mistaken belief that because our citizens *individually* possess courage, fortitude, and self-reliance, they must necessarily possess the same qualities when *aggregated* as soldiers. And next to this error was the fatal delusion, that an army animated by patriotism needed neither *instruction nor discipline* to prepare it for battle."

"Military commanders were not wholly deceived. In his testimony before the committee (of Congress) on the conduct of the war, General McDowell, who was selected to command the army in front of Washington, stated:

"I had no opportunity to test my machinery, to move it about and see whether it would work smoothly or not. In fact, such was the feeling, that when I had one body of eight regiments of troops reviewed together, the general censured me for it, as if I were trying to make some show. I did not think so. There was not a man there who had ever maneuvered troops in large bodies. There was not one in the army. I did not believe there was one in the whole country. At least I knew there was no one there who had ever handled 30,000 troops. I had seen them handled abroad in reviews and marches, but I had never handled that number, and no one here had. I wanted very much a little time, all of us wanted it. We did not have a bit of it."

"To his representations that the troops were green and uninstructed the ready reply was:

"You are green, it is true, but they (evidently referring to the Confederates) are green also; you are all green alike."

"General Patterson, who was in command of the army of the Shenandoah, was more in accord with the popular feeling. Writing to the Adjutant General from Hagerstown (Maryland), June 28, he stated:

"I beg to remind the general in chief that the period of service of nearly all the troops here will expire within a month, and that if we do not meet the enemy with them we will be in no condition to do so for three months to come. The new regiments will not be fit for service before September, if then, and meanwhile this whole frontier will be exposed.

"I have got my command into as good condition as I could expect in so short a time. Officers and men are anxious to be led against the insurgents, and if the general in chief will give me a regiment of regulars and an adequate force of field artillery, I will cross the river and attack the enemy, unless their forces are ascertained to be more than two to one."

"The next three weeks gave him (Patterson) a personal experience of the perplexities which beset Washington throughout the Revolution. The part assigned to him in the approaching campaign was to so occupy the enemy forces in the Shenandoah Valley, as to prevent them from making a junction with their main body at Manassas. Accordingly, on the 2nd of July he crossed the Potomac, and after a slight skirmish occupied Martinsburg. On the 15th he advanced to Bunker Hill, only 10 miles from Winchester, then occupied by the enemy. Here he was confronted and his plans deranged by the impending *dissolution of his army*. July 16 he wrote to the Adjutant General:

"I have to report that the term of service of a very large portion of this force will expire in a few days. From an under-current expression of feeling I am confident that many will be inclined to *lay down their arms the day their time expires*. With such a feeling existing, any active operations towards Winchester cannot be thought of until they are replaced by three-year men.' Thus does history repeat itself.

"While, through short enlistments, such was the demoralization of the troops in the Shenandoah, the disposition of the militia in the main army was quite as alarming. On the morning of the 21st of July, although the Secretary of War and the commanding general had besought them to remain, a regiment of infantry and a battery of artillery, whose term of service had expired, began their homeward march *to the sound of the enemy's cannon.*"

"The same day the remainder of the army, launched against the enemy in position at Bull Run, was totally defeated. In the panic that ensued, *discipline again* gave proof of its value. The battalion of regulars which covered the retreat and was the last to leave the field, checked the enemy's pursuit and retired in perfect order."

"It is well known that the strength of a chain is that of its weakest link, and with slight modifications the same principle applies to an army—that complicated mechanism upon which has often depended the fate of republics and empires. The army which went forth to Bull Run, . . . *was simply a chain of weak links.*"

"Except a battalion of eight companies, made up of the 2nd, 3rd, and 8th Infantry, a battalion of marines, a small detachment from the 1st and 3rd Dragoons, six batteries of artillery, aggregating 800 men, the troops who were expected to vanquish opposition, were exclusively composed of volunteers and militia. Some of the former had, *on the day of the battle*, been mustered into the service less than a month; the term of service of all the regiments of militia was on the eve of expiring. These facts will explain to any military mind the loss of the battle. The plan was all that could have been anticipated from an able and judicious commander, but when he sought to execute it '*to test his machinery,*' he found that discipline, *the only sure bond of cohesion*, was entirely wanting."

"George Heintzelman, after having in vain sought to rally his broken regiments, spoke of their conduct as follows: 'The want of discipline in these regiments was so great that the most of the men would run from fifty to several hundred yards to the rear and continue to fire—fortunately for the braver ones, very high in the air, and compelling those in front to retreat.'"

"As a skirmish line from some of the regiments of volunteers which participated in the conflict, was afterwards able to dispute the advance of the enemy in line of battle, it is plain that the loss of the battle was due more to *the lack of discipline* than to the want of individual courage.

"The number of troops which crossed Bull Run was: Confederate forces, estimated at 29,949; Union forces, 28,568."

"The Union loss in killed and wounded was 1492, or but 5 per cent of the total force engaged."

"The same regiments after a year's discipline would have scorned to retire with a loss of less than 30 to 50 per cent."

"The effect of this disastrous battle, which gave the enemy all the advantages of the initiative, had he chosen to use it, was to paralyze military operations for more than six months."

"Amazed and humiliated, the people bowed their heads, and confiding everything to military commanders, patiently awaited the opening of another campaign."

"In contrast with the conclusions of the historian the Joint Committee (of Congress) on the Conduct of the War, reported that the principal cause of defeat on that day was the failure of General Patterson to hold the forces of Johnson (the Confederate general) in the Shenandoah Valley."

Whatever justice there may be in the criticism of General Patterson's conduct of military operations in the Shenandoah, two facts should not be lost sight of; first, the general, who had served with distinction under General Scott in the war with Mexico, and who had subsequently left the army to engage in a manufacturing business, was at the outbreak of the Civil War 69 years old. Second, through the lack of a proper staff organization in Washington, General Patterson was not accurately informed of the true strength of the Confederate force under General Johnson. He believed it to be much larger than it really was. The situation called

for great energy and initiative in the military commander of the Union forces in the valley, and these qualities General Patterson either did not possess or, what is more probable, was too old to exercise.

The scope of these lessons does not permit of a detailed study of the military operations of the Civil War, but in order that the student may be informed of the manner in which the prosecution of the war was conducted it is desirable to quote the following from Chapter XIX of Upton's "Military Policy of the United States."

"The military operations of the year (1862), both in the East and the West, may be divided into three distinct periods. In the *first* our armies took the offensive, in the *second* the defensive, and in the *third* they again resumed the offensive.

First Period. (Plate 25.)

"In the East during the latter part of March, the *Army of the Potomac*, commanded by General McClellan, transferred its base from Washington to Fort Monroe; advanced up the peninsula on the 4th of April; engaged in the siege of Yorktown from April 5 to May 4; fought the battle of Williamsburg, May 5; West Point, May 7; Hanover Court House, May 27, and Seven Pines or Fair Oaks, May 31 and June 1.

"The only other battle in the East was that of Winchester, fought by General Shields, on the 23rd of March. In all these battles the Union troops were victorious. The general position of the enemy *at the beginning* of this period was with his right near Aquia Creek, blockading the Potomac; his center at Manassas, and his left in the Shenandoah Valley. The position of the enemy at the end of the period was with his main army around Richmond, his left under Stonewall Jackson, in the Shenandoah Valley, both forces being under the command of General Joseph E. Johnston.

"The position of the Union troops *at the close of the first period* was as follows:

"June 1, the *Army of the Potomac*, about 100,000, present for duty, on both banks of the Chickahominy, within six miles of Richmond; May 26, General McDowell,

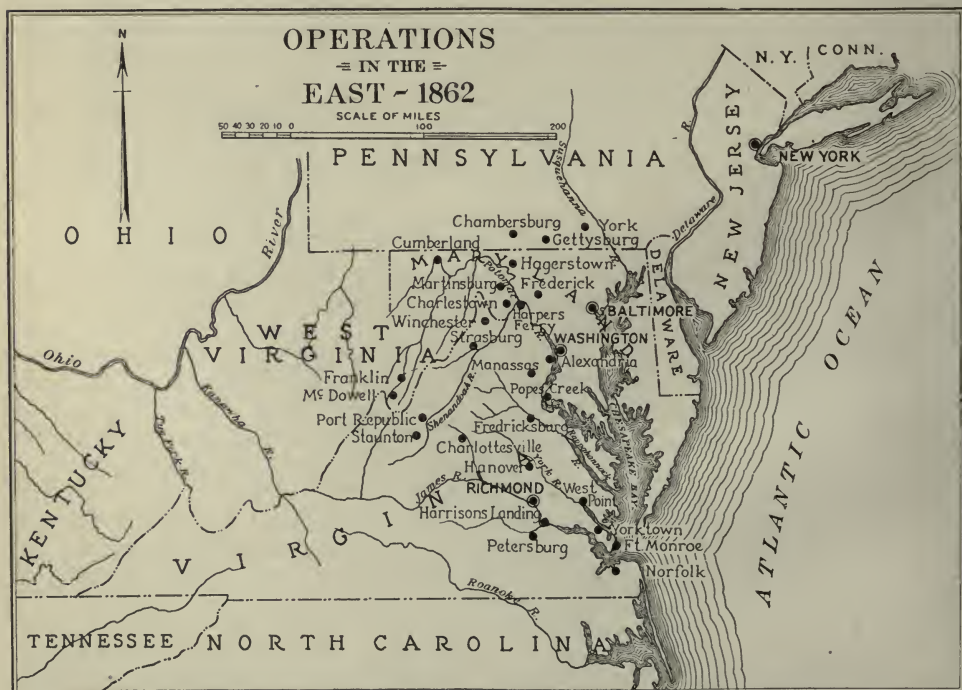


PLATE 25.

commanding *Department of the Rappahannock*, with 41,000 men at Fredericksburg, his advance but 15 miles from the right of the Army of the Potomac; May 24, General Banks, commanding *Department of the Shenandoah*, with 6000 men at Strasburg; Major General Fremont, commanding the *Mountain Department*, with 15,000 men at Franklin, West Virginia, one brigade within 10 miles of Staunton; General Wool at Fort Monroe and Norfolk with 10,000. Besides troops in Virginia, General Burnside was in North Carolina with an *expedition* of 11,500 men; General Thomas W. Sherman, with another *expedition* fitted out in the previous November, was in South Carolina.

"In Virginia our military forces, including those in the defenses of Washington, were under *six independent commanders*, whose movements could only be combined *by the personal supervision and orders of the President*. The lines of operations of the *Army of the Potomac* and of the troops in the *Department of the Rappahannock* converged upon Richmond. Those of the *Mountain Department* and the *Department of the Shenandoah* converged upon Staunton. Traversed by mountains and rivers, the front of operation of these six separate forces, extending from Norfolk up the Chickahominy to near Richmond, thence on to Fredericksburg, Washington, Strasburg, and Franklin, exceeded 250 miles.

"Leaving our forces thus exposed and in danger of being *beaten in detail*, let us turn our attention to the West. (Plate 26.) At the beginning of the year Major General Halleck was in command of the *Department of the Missouri*, the eastern limit of which was the Cumberland River. The part of Kentucky east of the Cumberland was occupied by the *Army of the Ohio*, commanded by Major General Buell.

"The enemy's front of operations or line of defense extended from Bowling Green on the right to Columbus on the left, a distance of 175 miles. His center was at Forts Henry and Donelson, the former on the Tennessee and the latter on the Cumberland River. The military operations of the year opened with the victory of Mill Spring, Ky., gained by General Thomas on the 19th of January. Under direction of General Halleck, General Grant moved from Cairo up the Tennessee River, and on the 6th of February, in connection with the navy, captured Fort Henry. Crossing over the peninsula, he appeared on the 12th before Fort Donelson, and on the 16th received its surrender. The Union loss was 446 killed, 1735 wounded, and 150 missing. The Confederate loss was 231 killed, 1000 wounded, and 13,829 prisoners, besides 65 guns and 17,600 small arms. The Confederate Army at the beginning of the siege was estimated at 21,123 men, of whom 4000 escaped; the Union troops began the investment with 15,000 men, but were reinforced before the surrender to 27,000. . . .

"The strategic effect of this victory was the immediate evacuation by the Confederates of Missouri, Kentucky, and nearly all of Tennessee. . . .

"March 11, the *Army of the Ohio* was added to the command of General Halleck, who directed all military operations from his headquarters at St. Louis. . . .

"March 17, General Grant resumed command at Savannah, and immediately ordered to Pittsburg Landing all his available troops. The Confederates in the meantime were not idle. Recognizing Corinth, the intersection of the two great lines of the Memphis and Charleston and the Mobile and Ohio railroads as the next objective point of the Union forces, General Albert Sidney Johnston summoned to its defense troops from Kentucky, Tennessee, Arkansas, and Florida, until by the end of March he found himself at the head of an effective force of 40,000 men.

"April 11, General Halleck took the field in person at Shilo, where the Armies of the Ohio, Tennessee, and Mississippi, with reinforcements from Missouri and Arkansas, gave him a force aggregating not less than 120,000 bayonets. On his arrival at Shilo, General Halleck reorganized the three armies into one; the right wing commanded by Major General Thomas; the left wing by Major General Buell; and the center by Major General Pope. General Grant held nominal position of second in command.



PLATE 26.

"Two hundred miles south of Corinth lay the Vicksburg and Jackson Railroad, the only line which now connected the Trans-Mississippi with the East. To defend it, even by calling all the troops from the west of the river, the enemy could not have assembled an army of 80,000 men. As appears since the war, the Confederate force at Corinth numbered but 47,000 men.

"According to the probabilities of war, had General Halleck advanced upon Jackson, the Mississippi might have been opened and the Confederacy cut in twain during the fall of 1862, but instead of adhering to the policy of concentration he unfortunately resolved to divide and scatter his army. After pursuing the enemy about 30 miles south of Corinth, General Buell, with the *Army of the Ohio*, was ordered to move upon Chattanooga, while General Grant, reduced to the defensive, was left in command of the District of West Tennessee.

"In June, General Pope was ordered to the East, and the following month General Halleck was summoned to Washington to assume the position of general in chief. The departure of General Halleck without appointing a successor left the troops in his department under *three independent commanders*. . . .

"At the *end of the first period*, our troops in the West were distributed as follows: General Curtis at Helena, Arkansas; the *Army of the Tennessee* in West Tennessee, the right at Memphis, the center at Bolivar and Jackson, the left at Corinth. The *Army of the Ohio*, the right near Florence, Alabama, the center on the Nashville and Chattanooga Railroad, and the left near McMinnville. Further to the left, General Morgan faced Cumberland Gap. From Memphis to McMinnville the distance was 300 miles, traversed by two formidable rivers, the Mississippi and the Tennessee; the front of operation of the western army extending from Helena to Cumberland Gap, exceeded 500 miles. In the two great theaters of war, East and West, our troops, under eight independent commanders, occupied at the close of the first period a front of not less than 750 miles."

Second Period.

"During this period the Government and the Confederates conducted war on contrary principles. The Government sought to save the Union by fighting as a Confederacy; the Confederacy fought as a nation. The Government recognized the states, *appealed to them for troops*, adhered to voluntary enlistments, gave the governors power to appoint all commissioned officers and encouraged them to organize new regiments. The Confederates abandoned state sovereignty, *appealed directly to the people*, took away from them the power to appoint commissioned officers, vested their appointment in the Confederate President, refused to organize new regiments, abandoned voluntary enlistments, and, adopting the republican principle that every citizen owes his country military service, *called into the army every white man between the ages of 18 and 35*.

"The effect of this draft, which was inaugurated by Virginia in the month of February and adopted by the Confederate Congress on the 16th of April, was to add to the Virginia contingent during the month of March, nearly 30,000 men. The quotas of other states were increased in the same manner.

"As these men poured into the old regiments, *three months sufficed to make them efficient*.

"Profiting by the division of the Union forces, the Confederates began the military operation of the second period in the Shenandoah Valley. (Plate 25.) Leaving a force to detain General Banks, General Stonewall Jackson, on the 8th of May, defeated at McDowell, West Virginia, two brigades of the *Mountain Department*. . . . Next returning to the *Department of the Shenandoah* he defeated General Banks at Winchester on the 25th of May and compelled him to retreat across the Potomac. Under orders from Richmond he continued his march northward on May 28, and on the 29th appeared before Harper's Ferry. Hearing of movements to intercept his retreat, he fell back on the 30th; slipped between the forces of Fremont and Shields, June 1, near Strasburg; repulsed the attack of Fremont at Cross Keys, June 7; and crossing the Shenandoah defeated two brigades of Shield's

division at Port Republic on June 9. June 17, with 16,000 men, he began his march to Richmond.

"Pursuing the *policy of concentration*, the Confederates called 15,000 men to the same point from North Carolina and 22,000 from South Carolina and Georgia. The concentration at Richmond having been effected, General Lee began the series of battles which raised the siege of the Confederate capital and compelled the *Army of the Potomac* to retreat to the James River, at Harrison's Landing. . . .

"The *Army of the Potomac* on the 26th of June, numbered for duty 115,102. The Confederates approximated 95,000. July 11, General Halleck was appointed general in chief.

"June 26, the troops of the *Mountain Department* and the *Departments of the Shenandoah* and the *Rappahannock* were organized into the *Army of Virginia*, commanded by Major General Pope (called from the West).

"An effort was made to unite the *Armies of the Potomac and Virginia* on the line of the Rappahannock. July 3, General McClellan was ordered to send away the sick of the *Army of the Potomac*. August 1, General Burnside, who had been withdrawn from North Carolina to Fort Monroe, was ordered to embark for Aquia Creek. August 3, the *Army of the Potomac* was ordered to withdraw from the peninsula and embark for the same point. August 14, after sending off its sick and stores, it began the march from Harrison's Landing to Fort Monroe, whence, as fast as transports could be procured, it proceeded to Aquia Creek and Alexandria.

"In the meantime the enemy began to move northward. August 9, General Jackson attacked General Banks at Cedar Mountain, and after a severe battle retired across the Rapidan to await the arrival of the main (Confederate) army.

"August 29 and 30, the Confederates gained the second battle of Bull Run; September 4, they crossed the Potomac; September 8, General Lee, at Frederick, issued his proclamation inviting the people of Maryland to join the flag of secession.

"Their success in the West was no less alarming. (Plate 26.) By means of conscription, General Bragg's army was increased to 50,000 men; at the head of two corps he crossed the Tennessee River east of Chattanooga on the 24th of August; turned Buell's left flank; threatened Nashville; crossed the Kentucky line September 5; captured Mumfordsville on the 7th, with its garrison of 4000 men, and thence threatening Louisville, marched to Bardestown and Frankfort. At the same time, Kirby Smith, commanding the Third Corps (Confederate), passed through Cumberland Gap, defeated the forces of General Nelson (formerly Morgan's), at Richmond, Ky., August 29, inflicting a loss of 1000 killed and 5000 prisoners, and thence, via Lexington, moved to Cynthiana, within 50 miles of Cincinnati. From Cynthiana he turned back and joined the main body at Frankfort. These movements at once neutralized all the summer operations of the *Army of the Ohio* subsequent to its departure from Corinth.

"Abandoning the railroads and all the positions held in north Alabama and southern Tennessee, General Buell, on the 30th of August, ordered his army to concentrate at Mumfordsville. Without halting he next moved to Nashville, where, still compelled to follow the lead of his adversary, he left a sufficient garrison for its defense and then began the series of marches which did not terminate till the 23rd of September, when he reached Louisville, on the Ohio River.

"The chances of disaster at the beginning of the second period, were apparently greater in the district of west Tennessee than in either Kentucky or Virginia. After the breaking up of the great army at Corinth, General Grant, in the course of the summer, was required to detach four divisions to join the *Army of the Ohio*. Later, when it began its retreat to the Ohio, he was ordered to send troops by water to defend Louisville, then in imminent danger of capture. These reductions left him with about 42,000 men to hold the fortified posts extending from Memphis to Corinth. . . . The disposition of troops in the district of west Tennessee on the 1st of October was approximately as follows: Memphis, 6000 men; Bolivar, 8000 men; General Grant's headquarters at Jackson, with 3000 men; Corinth, 19,000 men. . . . With the exception of victories of Iuka and Corinth an unbroken chain

of disasters marked the second period of 1862. The withdrawal of the *Army of the Potomac* from the James River to Washington and Alexandria, the retreat of the *Army of Virginia* from the Rappahannock to the Potomac, the invasion of Maryland, the retreat of the *Army of the Ohio* to Louisville, produced a depression in the public mind nearly as great as that which succeeded the battle of Bull Run."

Third Period. (Plate 25.)

"As soon as the *Army of Virginia* returned to Washington, General Pope, at his own request, was ordered to the West, the command of all the troops around the capital devolving on General McClellan.

"Crossing into Maryland, the advance of the *Army of the Potomac* reached Frederick on the 12th of September. Here General McClellan learned through a dispatch picked up in the enemy's camp, that General Lee, with a view to capturing Harper's Ferry, had divided and scattered his army."

At this point we will leave the narrative until the next lesson, with the following concluding remarks taken from the same source:

"On the 31st of March, 1862, the Government had in its service an army of 637,126 men, nearly all of whom were enlisted for the term of three years.

"The Confederate Army, composed largely of one-year volunteers, whose enlistment was on the eve of expiring, scarcely exceeded 200,000 men.

"The failure to subdue the Rebellion in 1861 has already been explained by our total *want of military organization and preparation*. The failure to subdue it in 1862, with the amazing advantages possessed by the Union, proceeded from a cause entirely different—the *mismanagement of our armies*.

"In discussing the events of 1862, most of our historians, according to their political connections, have contented themselves with laying the blame upon the President, the Secretary of War, or the commander of the *Army of the Potomac*.

"The candid reader, however, if not already convinced, will discover upon further investigation that the President and his subordinates were but the instruments or victims of a *bad system*; that the disasters of the campaign entailing the bloodshed of the three ensuing years had their origin in the needless *division of our armies*, and what is still more instructive, that the *cause* of this division is to be found in that defect of our laws which, contrary to the spirit of our institutions, tempted the President to assume the character and responsibilities of a military commander."

TWELFTH LESSON.

THE CIVIL WAR—PART II.

(Based Upon "Military Policy of the United States," by Upton.)

It was stated in our last lesson that the military operations of the year 1862 may be divided into three distinct periods, in the *first* of which the Government forces took the offensive, in the *second* the defensive, and in the *third* they again returned to the offensive. It was shown that in the first period the Government's plans for a general offensive resulted in several victories but that the net result, in so far as terminating the war was concerned, was negligible because the system adopted resulted in a *dispersion of effort* due to the want of a chief military commander to *direct and coordinate* the several armies as one well regulated machine. The President as constitutional commander-in-chief, attempted by his personal efforts to supply the deficiency but, even had he been a thoroughly trained soldier, able to appreciate the needs and requirements of each military situation to the minutest detail; the numerous grave cares and responsibilities of his office as the chief executive of the nation would have precluded him from giving to the military problem that *close and tireless application which is an absolute essential in the conduct of war*. Because of the evident need for an experienced commander, whose duty it would be to relieve the President of the actual direction of military operations, General Halleck was called to Washington from the West, and appointed general in chief on July 11, 1862.

The fault inherent in the system did not immediately disappear and in the second period of the year we have seen how the Union armies were thrown on the defensive and lost the *advantage of the initiative* because they lacked the very unity of command adopted by the Confederate Government, making possible a concentration of effort and the directing of the *whole military power toward the attainment of definite results*.

At the termination of our last lesson we saw that the *Army of the Potomac* under the command of General McClellan had crossed the Potomac River into Maryland in pursuit of General Lee's army and that upon his arrival at Frederick, McClellan learned that Lee, with a view of capturing Harper's Ferry, at the foot of the Shenandoah Valley, had sent General Jackson with three divisions to approach Harpers Ferry from several directions at once. "The remainder of the Confederate Army took position in the vicinity of Boonsboro and Hagerstown."

We have now come to the third period, which was marked by the return of the Government forces to the offensive.

General McClellan wished to take advantage of the absence of the three divisions under Jackson and accordingly moved his army so as to catch General Lee *while his forces were divided*, but, hearing of the approach of the *Army of the Potomac*, Lee ordered all of his available troops to assemble in time to give battle so that on September 14, the Confederate Army was able to make a strong fight at South Mountain.

It was, however, forced to retire from that position. On September 17, when the *Army of the Potomac* was in a position to defeat the Confederate Army (which might have resulted in the capture of most of the Confederate forces north of the Potomac), the garrison at Harpers Ferry surrendered to General Jackson.

"September 17, the two armies joined in battle at Antietam. September 19 the Confederates gave up the invasion and retreated to Virginia. Their losses during the Maryland campaign were 10,291 killed and wounded," their losses in prisoners captured during the battle with the *Army of the Potomac* were 6000 men. The losses of the *Army of the Potomac*, not counting those who surrendered at Harpers Ferry, were, killed, wounded, and missing, 13,794.

The remainder of the year 1862 was consumed by the Union Army, under General Burnside (General McClellan having been relieved) in an offensive campaign which had for its objective the capture of the seat of the Confederate Government, Richmond, the most notable event of the campaign was the battle of Fredericksburg in which the Union forces were repulsed with a loss of 12,321 killed, wounded, and missing. Protected by intrenchments, the Confederate losses were only 5309.

During the same period the offensive campaigns waged by the leaders of the Union armies in the West were more fruitful of favorable results. General Buell succeeded in driving the Confederate forces under General Bragg out of the State of Kentucky. After the retreat of Bragg from Kentucky the number of troops in the *District of West Tennessee* (Plate 26) was increased by the arrival of new levies to 72,000 men, of whom 18,000 were at Memphis. The remainder were distributed, as before, at Bolivar, Jackson, and Corinth.

The situation at the end of the third period of 1862 is described by General Upton in the following language: "At the close of the year 1862 the *Army of the Potomac*, with one leg still chained to the capital (Washington), confronted its antagonist at Fredericksburg on the Rappahannock; the *Army of the Cumberland* went into winter quarters at Murfreesboro, Tennessee; and the *Army of the Tennessee*, like a huge serpent, was approaching Vicksburg along the levees of the Mississippi."

Comment.

The student is naturally impressed with the tremendous expenditure of life and effort, not to mention the less apparent waste of time and treasure, which resulted from the military operations up to the close of the year 1862 with so little gained toward the termination of the war. We have attempted to show that on the part of the Government of the United States that condition arose from a *lack of a proper*

system for the control of the effort. In order to understand how the President was led to the determination to assume the character and responsibilities of a military commander it is necessary to review briefly certain events leading up to it.

General Winfield Scott being too advanced in years to bear the burdens of another war, retired on November 1, 1861, and General George B. McClellan was appointed general in chief. Humiliated and made wiser by the defeat at Bull Run, the President, the Cabinet, and the people were at first disposed to give the new commander all the time necessary to organize and discipline his troops; but when several months had passed with no indication of an advance, the army in the meantime having increased to about 200,000 men, impatience for action returned with accumulated force. As a recognition of this feeling, Mr. Stanton, on the 13th of January, 1862, was appointed Secretary of War. January 27, at the suggestion of the Secretary of War, the President issued the first "General War Order," fixing the date of the 22nd of February as the day "for a general movement of the land and naval forces of the United States against the insurgent forces." About the same time the general in chief submitted his plan of operations, which was to transfer the *Army of the Potomac* from Washington and Annapolis by water to Urbana or Fort Monroe, and thence advance upon Richmond.

Disappointed, if not alarmed, at the proposition to remove the army while the enemy still held the capital in a state of siege, the President disapproved of the plan, and himself ordered that all disposable force of the *Army of the Potomac*, after providing safely for the defense of Washington, be formed into an expedition for the immediate object of seizing and occupying a point upon the railroad southwest of what is known as Manassas Junction, all details to be left to the commander-in-chief.

Finally, after much delay a plan proposed by the general in chief was approved by the President who, however, did not refrain from issuing orders *without consulting the general in chief* and which were calculated to *interfere with his orderly execution of the plan of campaign and lessen his influence.*

One of the features of the plan was that the general in chief was to personally superintend its execution. In short, he was to command the military forces engaged in it, and, as at this time influences were at work to destroy the confidence of the President in the general in chief, on March 11, 1862, "yielding to pressure which he could no longer resist," the President issued War Order No. 3, which was pregnant with disaster.

"The first paragraph, on the ground that General McClellan had taken the field, relieved him from his duties as general in chief, but retained him in command of the *Army and Department of the Potomac.*"

"The second paragraph created the *Department of the Mississippi*, commanded by General Halleck and the *Mountain Department*, commanded by General Fremont, and the last paragraph of the order directed all commanders of departments to '*report severally and directly to the Secretary of War.*'

"In discussing an order which led to nearly all the reverses of the year 1862, the object should not be to vindicate a military commander, not to blame a great and patriotic President, but to satisfy ourselves that the causes of our disasters, like those of preceding wars, can be traced to *defects of military legislation*, which Congress at any time has the power to correct.

"One of the first acts of Congress after the adoption of the Constitution was to relieve the President of the multitude of details pertaining to the administration of the army, by creating the War Department, the Secretary of which was 'to execute such duties relative to military commissions or to the land and naval forces, ships, or warlike stores of the United States' as, from time to time, might be enjoined upon or intrusted to him by the President. The Secretary was further required to conduct the business of the department in such manner as the President might direct. By means of these restrictions upon the Secretary of War, who, under the practice of the Government, has always been removable at the pleasure of the President, the

constitutional authority of the latter as commander-in-chief of the army and navy was preserved unimpaired.

"Had Congress at the same time created the grade of general in chief, as the officer to command the army, subject only to the order of the President, it is more than probable that the disasters of the year 1862 might have been avoided.

"The absence of such a law, during the War of 1812, *proved the necessity* of having such a military adviser. Four years before it broke out, General Dearborn, a Secretary of War, ambitious of military distinction, reported to the President:

"In the event of war, it will, I presume, be necessary to arrange our military force in separate departments, and to have a commander to each department, and, of course, to have no such officer as commander-in-chief."

"The fruits of this fatal advice were soon gathered. Unable to attend in person to the duties of commander-in-chief, the President, during the campaign of 1813-14, permitted General Armstrong, the Secretary of War, to control military operations until the enemy approached the capital, when in the face of a great national calamity he was compelled to resume his constitutional functions by directing that no orders for the movement of troops should be issued from the War Department without previously receiving Executive sanction.

"A few days later the military authority of the Secretary of War had again to be suppressed on the field of Bladensburg, when the President gave him the verbal order '*to leave to the military functionaries the discharge of their own duties on their own responsibilities.*' To this confused system, which was productive of nothing but disaster, Mr. Lincoln returned, when he issued the fatal order of March 11, *dispensing with the services of a general in chief and ordering all military commanders to report to the Secretary of War.* By this stroke of the pen, the command of our vast armies at the moment they were ready to strike, passed from the hands of an educated soldier, to those of the President and Secretary of War, neither of whom possessed any knowledge of the military art.

"The effect of this joint command soon became apparent, as the following incident shows:

"On March 12 General McClellan called a council of war, composed of the four corps commanders who had been appointed by the President. Those officers, after carefully considering all of the elements of the problem, formulated a plan for the military operations which in their unanimous opinion should be adopted. This plan was intrusted to General McDowell who was instructed to proceed to Washington and lay it before the Secretary of War. In the meantime McClellan telegraphed to the Secretary that a plan had been agreed upon by the Council of War and that McDowell was then en route to present it to him. Without waiting to consult the President, immediately the Secretary sent the following reply to General McClellan:

"Whatever plan has been agreed upon, proceed to execute at once, without losing an hour for my approval."

"The same afternoon when the plan was presented to him by General McDowell, the Secretary, not being versed in military matters, could see nothing in it that to him indicated that it was a plan and called upon General McClellan to state what plan of operations he proposed to execute. General McClellan insisted that he and the corps commanders had been unanimous in formulating the plan which had been sent to the Secretary and stated that if it were approved the movement of troops could begin on the following morning. Then the Secretary laid the plan before the President who gave it a qualified approval.

"The plan proposed by General McClellan's Council of War had for its main objective the capture of Richmond which was the seat of the Confederate Government and at the same time it recognized the importance of protecting the national capital from attack by the enemy."

We have seen how the operations on the peninsula in 1862 came to naught so far as accomplishing the objective of the campaign and how the Confederate Government with its better system of military command was enabled to throw its troops

into Maryland, causing the *Army of the Potomac* to follow its lead as the loadstone draws the steel.

The army upon which General McClellan relied to carry out his plan consisted of four corps with a strength present for duty on April 1, 1862, of 136,444. Whatever objection the President had to the route chosen by the military commanders for the advance against Richmond, from a military point of view "it is manifest that after having assented to the plan recommended by the four corps commanders of his own appointment, *he ought to have ordered to the new theatre of operations every soldier who was not deemed necessary for the defense of the capital.*" "In military tactics it is said that one good position is worth a dozen indifferent ones. So, too, in regard to campaigns it may be said that their success can only be confidently look for when all of the available military resources are judiciously employed for their execution."

"But the President was by no means the master of his own actions. . . . He had assumed all of the personal responsibilities of a military commander, with the further disadvantage that, as chief magistrate, he could not, even in matters of detail, turn a deaf ear to the appeals and representations of his political and military advisors.

"Whenever a territory was threatened with real or imaginary invasion, the people felt that they had the right through their representatives to appeal to him for protection.

"Educated in political life he could not fail to apply the same system of reasoning to military as to political questions." Hence it came to pass that in a time of the greatest public emergency "troops could not be ordered from one department, district, or place to another without first paying 'a due regard to all points,' which meant that the requirements of the military situation were at all times subject to jeopardy through a 'regard' for the fears of local communities."

"In this manner strategical principles, involving perhaps the fate of an army, had to give place to political considerations. The first evidence of this fact was presented in a demand made to detach Blenker's division from the *Army of the Potomac*, and to send it to the *Mountain Department* where it was impossible that a great battle could be fought. For days the President resisted the demand, but on the 31st of May, after most of the troops had embarked for Fort Monroe, he was compelled to yield, and wrote General McClellan as follows:

"'This morning I felt constrained to order General Blenker's division to (join) Fremont, and I write this to assure you that I did so with great pain, understanding that you would wish it otherwise. If you could know the full pressure of the case I am confident that you would justify it, even beyond a mere acknowledgment that the commander-in-chief may order what he pleases.'"

General Upton remarks that "*This order detached 10,000 troops, and was the beginning of the disintegration of the army (of the Potomac).*"

It is seen that the detaching of Blenker's division was a direct play into the hands of the enemy when it is considered that Blenker was sent to reinforce Fremont's command which was one of the forces engaged in attempting to capture or drive General Stonewall Jackson's Confederate forces out of the Shenandoah Valley. While it is stated that "it was impossible that a great battle could be fought" in the region to which Blenker was sent, yet it is a fact that General Jackson in the Valley was carrying on a campaign well calculated to mystify, mislead, and surprise the Union generals pitted against him and, as part of the general plan of operations determined by the higher military commanders of the Confederate Government at Richmond, we have seen that it was most effectual in *weakening the main Union Army* as it was about to be launched upon its first big campaign, by causing the transfer of Blenker's 10,000 troops from McClellan to Fremont.

The month of May, 1863, found the Union *Army of the Potomac* and the Confederate *Army of Northern Virginia* confronting each other on opposite sides of the Rappahannock River in the vicinity of Fredericksburg, "the morale of the Union

Army had suffered from the defeats it had sustained in the battles of Fredericksburg and Chancellorsville, fought in the preceding months of December and April, respectively, while that of the Confederate Army had reached the highest point that it attained in the course of the war." General Joseph Hooker now commanded the *Army of the Potomac*.

The Confederacy had resorted to obligatory service, and Lee's army was at once increased by a large force of conscripts so that by the end of May he had 76,224 men and 272 guns. Urged by political as well as military reasons the authorities of the Confederate Government decided upon an offensive campaign for the year 1863 and early in June Lee's army began its movement northward which terminated in the great battle of Gettysburg, fought during the first three days of July.

When Lee moved from his position behind the Rappahannock, Hooker started in pursuit but, having lost the confidence of the Government at Washington, he was relieved on the 28th of June and the command of the *Army of the Potomac* then fell to General George Gordon Meade who commanded it during the battle of Gettysburg and in the subsequent operations.

In the meantime there had been developing on the battlefields of the West a man of genius, for whom the hour had now arrived.

"In February, 1864, Congress revived the grade of lieutenant general, which had last been held in the American Army by Washington in 1799. The President appointed Major General Ulysses S. Grant to the office and made him general in chief of all the Union armies—and personally gave him assurance that he was to be allowed to exercise the real functions of the office.

"Then, for the first time since the war began, a definite plan of action was laid out for the armies of the United States—a plan that contemplated the simultaneous and concerted movement of all the armies in the vast theater of the war toward a *single ultimate objective*; namely, the destruction of the only two organized armed bodies of any considerable strength that the Confederacy had in the field. Those two bodies were Lee's army in Virginia and the force then under General Joseph E. Johnston at Darlton, Georgia. . . ."

The stories of the battles of the Wilderness, the siege of Petersburg, and General Lee's surrender at Appomattox Court House on the 9th of April, 1865, are too well known to require recounting.

From the very brief review which our space has permitted, it is obvious that "the time required for the training of extemporized armies depends largely on the presence or absence of trained instructors.

"If there be a corps of trained officers and non-commissioned officers and a tested organization of higher units with trained leaders and staff officers, the problem of training is limited to the training of the private soldier. This can be accomplished in a relatively short time, and under such conditions if arms and equipment are available a respectable army can be formed within six months. But where the leaders themselves are untrained and where officers and men must alike stumble toward efficiency without intelligent guidance, the formation of an efficient army is a question of years. Indeed such a force cannot become an army at all within the period of duration of modern wars.

"As the American war of 1861-1865 presents the singular phenomenon of two extemporized armies gradually developing while in conflict with each other, it is a most remarkable record of the evolution of such forces.

"In the conflicts of 1861 both officers and men were untrained for the duties demanded of them. Even the companies were imperfectly organized as units of the regiment, the lack of cohesion was still more apparent in the higher units. Bull Run disorganized both armies. One was remoralized by defeat and the other by victory.

"By 1862 effective regiments, brigades, and divisions had come into being, but the conduct and leading of higher units as a rule was still imperfect. It was not until 1863 that the armies confronted each other as complete and effective military

machines. But even in the early stages of the war the influence of *trained* and *able leaders* was apparent.

"The *time required* to make an effective soldier depends very largely on the *organization in which the recruit is enrolled.*" The recruit of 1861 could not become a *good soldier* until his captain became a *good captain*, but the recruit of 1863 was absorbed in a *team already trained*, and therefore became a trained soldier in a few months of active service. But while the history of the Civil War is instructive as a record of military evolution it cannot be invoked as a guide of military policy, for we can count upon it that *in our career as a world power no serious competitor* will ever oppose us with *extemporized armies*.

"In view of these considerations it is obvious that the citizen soldier must have some training in peace if he is to be effective in the sudden crisis of modern war. The organization in which he is to serve must exist and function in time of peace, and in view of the limited time available for training it should be a fundamental principle of American policy that no officer should be intrusted with the leadership of American soldiers who has not prepared himself for that responsibility in time of peace. *The American soldier, whether regular or volunteer, is entitled to trained leadership in war.*"

THIRTEENTH LESSON.

DEVELOPMENT OF THE MILITARY RESOURCES AND MILITARY POLICY OF THE UNITED STATES—1898 TO 1914.

Aftermath of the Civil War: State of Preparedness.

"The conclusion of the Civil War found the United States for the first and only time in its history—prepared for war."

In point of view of the numbers of officers and men trained in the duties of the soldier; in the kinds, quality, and quantities of military stores on hand and available for immediate use; in the availability of experienced and intelligent leaders, both in the military and civil departments of government, and in the morale of the Government and the major portion of the population, the United States had little if any thing to ask for.

The nation, as well as the army, having passed through four years of war in which its resources, spiritual as well as material, had been tried to the limit of endurance, had learnt its own weakness and strength. It knew—as never before—how to make war. The governmental institutions had been tested in the crucible of civil war and had emerged with a new and finer temper.

The United States in 1865 was potentially the mistress of the American continent by sheer virtue of her dynamic and spiritual prestige. She was, so far as the destinies of the American nations were concerned, the greatest single guarantee of peace existing in the world, because—being thoroughly prepared for war—she was able to effectively impose her will for the preservation of peace. Nor was it necessary under these circumstances for the Government of the United States to do more than use the moral influence of the nation, in order to secure the integrity of the neighboring American states, as was evidenced by Napoleon's prompt evacuation of Mexico upon the request of this Government.

She had in her Regular Army in 1866, 33,490 officers and men who had been trained in the greatest school of war—war itself. She had commanders of high rank and proven ability. She had an abundance of skillful subordinate commanders and staff officers and a military organization which had been evolved after numerous experiments and changes into a perfectly coordinated and smoothly running military machine. Aside from these advantages, and what is of still greater importance, she had a great reserve of citizens trained in the art of war—thanks to the recognition of the universal obligation to perform military service, that had been forced upon the public conscience by the exigencies of the war.

For all of this the nation had paid a price :

1. In human life :

Killed and died of wounds, Federal troops.....	110,070
Killed and died of wounds, Confederate troops.....	50,700*

Total killed and died of wounds..... 160,770

2. In treasure :

Cost of maintenance of the military establishment, 1861-1865	\$2,736,570,923.50
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3. Additional, economic, loss :

The further economic loss, due to deterioration and destruction of private property; retarded commercial, industrial, and agricultural development; diminished man-power resource, due to wounds and disease not resulting in death, and the addition to the nation's pension rolls of thousands of disabled soldiers as well as widows and orphans, is incalculable.

The survey just given of the state of military preparedness of the nation at the end of the Civil War shows a condition bright with the possibilities for a safe, sane, and adequate military policy for subsequent years. From it we turn with interest and anticipation only to find that no sooner was the situation in Mexico cleared up by the withdrawal of the French troops, than did Congress revert to its old policy of reducing the army, discarding the advantages gained and the lessons learned from costly experience, and leaving the nation again in a state of military retrogression.

The Regular Army, what there was of it, was widely scattered along the frontiers, in distant military posts in the North and West. Nowhere were sufficient troops brought together to enable our generals to get the practice in maneuver which is necessary to their efficiency and for the development of subordinate commanders. Military education was neglected, military progress ceased and the army entered upon a period of "dry rot" from the monotony of which relief came only in occasional Indian uprisings. The work of the army during the period from the close of the Civil War to the outbreak of the war with Spain was characterized by the policing of the growing West. "Its history during that period is full of local interest and much valuable assistance was rendered to the pioneer communities, but so far as military organization goes the army did not deserve the term and its functions might have been as well performed by a constabulary." Promotion was slow and officers arrived at higher command grades only after they had become too old to efficiently perform their functions. Year after year went by and made this condition worse and more dangerous, for each succeeding year brought the nation closer and closer to the possibility of another war, which came at last, as it inevitably will when a system of neglect renders the armed strength of the people impotent. It found the United States now grown to a great industrial and commercial nation, again, unprepared for war.

In one sense only may the United States be said to have been prepared for the war with Spain, and that is it had the people behind it. There was a popular cry for intervention in Cuba. That the war entailed consequences reaching far beyond the horizon of popular imagination, bringing the nation as it did to the threshold of world politics, evidences the possibilities into which a government may be plunged not by military preparedness, not by an intelligent education of the people in the nature and requirements of war, but by a persistent education of the population in the doctrine of unpreparedness and a general ignorance of the relations of military strategy to political strategy. It is not our purpose to discuss the political aspects of the war with Spain. Whether the Government of the United States had wished to engage in war in 1918, or not, it would have been very difficult, if not dangerous or even impossible, to resist a demand for intervention in a cause popularly conceived to be a righteous crusade in the name of humanity. Governments have from time to

* Estimated on basis of per cent of same class of casualties in federal forces.

time found themselves forced to enter upon a foreign war, not from motives of conquest or for national defense, but by the force of public opinion arising within their own domains.

The condition of the United States at the time of the declaration of war against the Spanish Government was one of military disorganization and unpreparedness. As one high authority has stated it, "on every side was lack of well-thought-out preparedness. A clumsy, bureaucratic system of administration crumbled under the first pressure which was put upon it; the sanitary administration of our camps showed in many instances lack of elementary knowledge and reasonable prudence, and an entire want of discipline. There were some marked exceptions, but generally speaking, sanitary incompetence, together with administrative failure, served to give us a death list many times greater than that from bullets."

The state of supply and equipment was hardly better than the administrative organization of the army. Troops were sent into a tropical climate wearing a woolen uniform of a style only suitable for garrison duty in a cool climate and of a color so conspicuous that it made the wearer a ready mark for the Spanish infantry and artillery. While the Regular Army had previously been equipped with a modern magazine rifle using a smokeless powder, there were instances of volunteer troops going into action, carrying an old-fashioned rifle of heavy caliber using a cartridge loaded with black powder, against the Spanish infantry who were armed with a Mauser, a highly efficient weapon of that period. The same dread disease which had caused General Scott to hasten away from the Tierra Caliente in 1846 and to make every effort to gain the healthier altitudes away from the Mexican coast, seized upon the American Army even while it was besieging Santiago and the deadly "vomito," or yellow fever, smote right and left.

A sober consideration of the circumstances attending the Spanish-American War induces the belief that nothing but the greater military incompetence of the Spanish Government saved the people of the United States from a retribution from which they would have recoiled with horror and mortification. Within the course of six short months the military power of an enlightened nation of over 63,000,000 population, was hurled precipitately against the armed strength of a third- or fourth-rate military power at a place far distant from its source of recruitment and supply, and was cast back upon the shores of the United States stricken with disease, disorganized and all but disheartened. That this state of affairs did not make a very deep impression on the public mind was due to the relatively small numbers of troops employed and the fact that public interest in the meantime had become centered on the results of naval operations in the Far East and the ensuing campaigns in the Philippine Islands.

Nothing of military value is to be learned from the latter operations. Mention of them serves to recall the fact of our embarkation upon a course, the initiation of which drew our interests close to crossing those of Germany and the continuation of which has carried us ever further into the spheres of the world powers.

As shown by the chart found at the end of this lesson (Plate 27), the average duration of all periods of peace in the history of the United States, from 1774 to the close of the Philippines Insurrection, 1902, has been 20 years. With the long period, 33 years, of peace following the Civil War the conclusion might have been justified in 1895 that the previous history of the country as to the duration of intervals of peace was no longer to be the criterion and that we were as a nation due for a prolonged peace of indefinite extent. An examination of the facts shows that in 1797, during the peace following the Revolution, we were threatened with a war with France. Immediately following the Civil War our state of military preparedness averted a war with Napoleon. In 1895 we were engaged in a dispute with Great Britain over the Venezuela question that seemed to threaten war. All of our periods of peace have been marked by Indian outbreaks requiring the employment of military force by the Government. In times of peace the military power of the national government has been invoked by the governors of states upon many occasions, for the restoration or preservation of order where the ordinary means of

government have not availed. The student is able to make his own deduction as to the reasonable conclusion to be withdrawn from a prolonged peace as to the probability or improbability of the recurrence of war.

Incidences of the Spanish-American War were reminiscent of one of the gravest characteristics of the Government's conduct of the campaigns of 1861 and 1862. There was little or nothing to be apprehended of an invasion of our territory by the Spanish Army but of the whereabouts of the Spanish fleet there was a lack of definite information and as it became known that the fleet had left Spain for an unknown destination a great fear seized upon various coast cities and towns out of which grew a demand for local protection. A similar situation, it will be recalled, led to the detaching of Blenker's division from the *Army of the Potomac* just as it was entering upon the Peninsula Campaign of 1862, which event was recorded by Upton as the "beginning of the disintegration of the army." It requires no great knowledge of military affairs to comprehend what such practices may lead to, and it is worthy of note that our Government in 1898 was able to resist the pressure which, had it been yielded to, could easily have resulted in the dispersion of our fleet and a purposeless frittering away of our naval strength that would have left our eastern coasts open to Cervera's fleet.

"For many years preceding the war with Spain, Congress had been urged to make adequate provision for the protection of our sea-coasts, but it had been so tardy in doing so that, when the war broke out, the condition of our coast defenses was far from satisfactory. A very few modern guns of high power had been placed in position. It is true that much work was in progress, but it takes years to construct guns and to build emplacements for them and what still remained to be done at that time required many months. If suddenly attacked by a first-class sea power, most of our ports would have been practically helpless. But even had the sea-coast defenses been all that could have been desired, there was yet lacking the most important element of all—troops to defend the rear of the coast defenses. It is

only desired to point out the general state of decay into which our national defense had fallen in 1898 and that it was a realization of that fact by the portion of the population most directly affected by the war with Spain—the eastern coast—which subsequently led to a gradual improvement in some of the conditions from which the national defense suffered."

The tremendous decadence in our military system from the year 1865 to the year 1898 cannot fail to raise several significant questions:

Having, at the end of the Civil War, a great abundance of *military strength* developed from the national *military resources*, would it not have been the part of wisdom for our Congress to establish a military policy adapted to the maintenance of an equitable military establishment whose function would be to perpetuate the preparedness then existing by providing a corps of trained instructors for the military training of on-coming generations of American manhood?

Having available such an accumulation of experienced knowledge, should not our Congress have provided for a progressive system of military education for the officers

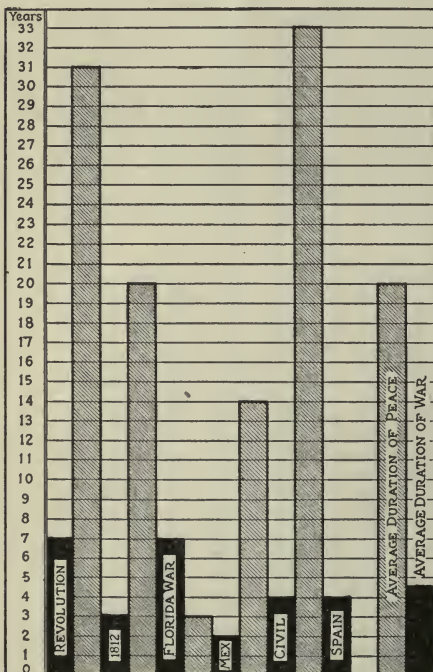


PLATE 27.—Sequence of Wars and Intervening Periods of Peace from 1774 to the Conclusion of the Philippine Insurrection, 1902.

and non-commissioned officers of our army, in order that the lessons in strategy and tactics might be passed on from masters like Grant and Lee, to succeeding commanders for all time?

Having been forced, in the second great war for its existence, and for the second time within the hundred years, to vindicate the principle of universal obligation to perform military service; should not our Congress have made effective provision for the actual training of our citizenry in time of peace for the discharge of their natural obligation to our country in time of war?

Should not Congress then have made provision for an adequate, well-trained, and skillfully officered militia, capable of performing its constitutional functions?

In these questions it is believed that the student will find much food for thought in the proposition that, for nations there is no such thing as "standing still." One day, one age is like its predecessor only in that the former is the seed which gave nourishment to the larger and fuller growth. When that condition ceases, decay and death ensue. Nations can move but in one direction and continue to exist as independent units. Fortunate is that one which can for a time endure the destructive influences of stagnation. Carthage entrusted her defense to impressed soldiers, while her citizens reveled in the luxuries of opulence, and Carthage was expunged. Roman citizenship surrendered its crowning glory, the right and honor of bearing arms in defense of the state—and Rome fell. China entrusted her frontier defenses to a stone wall and hirelings, while her citizens gave themselves up to the pursuits of industry and erudition—and the numerically great Chinese people have been the sport of nations.

FOURTEENTH LESSON.

DEVELOPMENT OF THE MILITARY RESOURCES AND MILITARY POLICY OF THE UNITED STATES—1914 TO 1920.

Period of the World War Defined.

The World War was inaugurated by the German invasion of Belgium in the spring of 1914 and active military operations terminated with the signing of the armistice, November 11, 1918. The United States was a participant in the war from April 6, 1917, the date its Government declared war against the Government of the German people, until the cessation of the war. For the purpose of our present study it is considered expedient to regard the period of the World War as including the years 1914 and 1920 in order that certain related incidents may be considered in connection with the development of our national military preparedness precedent and subsequent to our armed participation in the conflict.

In order better to appreciate the part performed by the "*Army of the United States*" in the World War, it is necessary to review briefly certain previous events which had an important influence upon the form of our military establishment in 1917.

Military Education in the Army.

The United States Military Academy. The most important sections of the law of 1805, *from the point of view of constructive military legislation*, were those, which empowered the President to establish a corps of engineers, with a cadre of not over 20 officers and cadets, and provided that "the said corps, when so organized, shall be stationed at West Point, in the State of New York, and shall constitute a military academy."

Of this act General Upton wrote in 1880, "although the law was not enacted until nearly a quarter of a century after the Revolution, the founding of the United States Military Academy, at first intended for the education of but three or four engineer cadets, was the one great and lasting military benefit derived from our experience, during the long struggle for independence" and he adds "our

National Military Academy, founded at the instance of the great men of the Revolutionary era" (Washington, Hamilton, Knox, and Pickering), "has grown with our growth, has kept up in our midst a thorough knowledge of the military profession, and has given us competent commanders for any force we have found it necessary to use, . . . whether we have utilized as fully as we might have done, the soldierly training imparted at West Point, is a question which may be as readily answered by an appeal to the facts of history."

By "*an appeal to the facts of history*" General Upton refers to the unfortunate policy of the War Department in 1861 which, through a perfectly honest fear of "ruining the Regular Army," forbade officers being detached from their regular regiments for the purpose of commanding volunteer regiments.

This policy operated so "that officers already in command of regiments and brigades were ordered back to their companies to serve in obscurity," while men of little or no education and with no claim to military knowledge or experience at once leaped to high commands. "For this deplorable result, entailing the prolongation of the war and a useless sacrifice of life and treasure, our military counselors at Washington were chiefly responsible."

In 1861 the great bulk of the Union Army was raised *by states* and the officers were appointed by the respective governors, up to the grade of colonel, while generals were largely appointed upon the recommendations of congressmen. Armies were hurried into campaign and even into battle within a few weeks of their assembling and *with inexperienced leaders and untrained men it is perfectly natural that disasters followed.*

Nothing is more inevitable in war than the disastrous consequences of a system which picks men from the midst of the peaceful pursuits and thrusts them into places of high command. On the other hand it is equally true that training and experience will not make a military commander of any sort out of a man who lacks the requisite ability.

In 1917 the errors of previous wars, in the matter of the appointment of officers, were largely avoided. Other errors there may have been but, by the training and selection of able civilians, *through the TRAINING CAMPS*; by the *temporary promotion of regular army officers of good record*, to command battalions, regiments, brigades, and divisions composed of the drafted men; by the *retention of experienced and able National Guard officers*, and, by an honest effort to eliminate the unfit from positions of command or responsibility in the leadership of our troops, the War Department showed a keen appreciation of and an earnest intention to profit by the lessons of the past.

The Infantry and Cavalry School.

The Infantry and Cavalry School was established at Fort Leavenworth, Kansas, in 1881, by General Sherman. Although not created by statute, its existence was recognized by Congress in several acts of appropriations, beginning with the Act of March 2, 1889. It was superseded by the Army School of the Line which was first recognized by the Act of March 3, 1909.

This institution, originally devised as a school of application for officers, has developed into an aggregation of comprehensive schools embracing in their combined curricula theoretical and practical instruction in the duties of line, engineer, signal and staff officers. It was the forerunner of several special schools established at different times and places for the professional and technical instruction of officers of the different arms and branches of the military service and led to the establishment of the Army War College.

In consequence of General Sherman's foresight the army had, in 1914, the following schools in operation:

The Army War College, Washington Barracks, Washington, D. C.

The Army School of the Line, Fort Leavenworth, Kansas.

The Army Signal School, Fort Leavenworth, Kansas.

The Staff College, Fort Leavenworth, Kansas.
 The School of Musketry, Fort Sill, Oklahoma.
 The Mounted Service School, Fort Riley, Kansas.
 The School of Fire for Field Artillery, Fort Sill, Oklahoma.
 The Engineer School, Washington Barracks, Washington, D. C.
 The Coast Artillery School, Fort Monroe, Virginia.
 The Army Medical School, Washington, D. C.

From all of which graduates had gone forth annually to carry the latest doctrines pertaining to the branches of the service concerned and to transmit tactical and technical instruction, through the medium of the "*Garrison Schools*," conducted at each army post, or station during the winter season, for the benefit of the large numbers of officers who could not be accommodated immediately at the service schools.

In addition to the foregoing means for the education of the officers, provision was made for the instruction of non-commissioned officers and selected privates by the establishment of a school for bakers and cooks and garrison schools, the latter being conducted under the direction of the organization commanders for their respective units.

All of these educational agencies were a frank acknowledgment of the truth that *a military officer requires special preparation for the responsibilities of his profession* and the curricula were specially devised to transmute knowledge into a real, available strength and *to test the mental, moral and physical capacities of officers*. The army felt that it could not know too much about its own particular business and its personnel and that it owed a patriotic duty to the nation to avail itself of every opportunity afforded by the appropriations made by Congress to improve its resourcefulness.

The coordinating head of all of the system was the Army War College, established by the act of May 26, 1900, "having for its object the direction and coordination of the instruction in the various service schools, extension of the opportunities for investigation and study in the army and militia of the United States, and the collection and dissemination of military information."

That the War College and the service schools did excellent work is attested by the many able battalion, regimental, brigade, and division commanders furnished by the Army during the World War and by the able manner in which the operations of our forces were directed by the general staffs of the higher commands.

Military Establishment.

The General Staff, establishment of. What was probably the most far-reaching legislation of the 10 years preceding the opening of the World War, in its effect upon the efficiency of our military establishment, was the creation by Congress of the General Staff Corps, in the act of February 14, 1903.

The most important duties of the General Staff Corps as defined in that law were "to prepare plans for the national defense and for the mobilization of the military forces in time of war; to investigate and report upon all questions affecting the efficiency of the Army and its state of preparation for military operations, to render professional aid and assistance to the Secretary of War and to general officers and other superior commanders."

This piece of legislation put the army of the United States on the road to becoming a complete and well-coordinated military machine constructed along the lines of the modern armies with which it might in the course of events have to cooperate or contend. That such an event did transpire in 1917 proves the wisdom of the law.

That our general staff was not at once as proficient as the general staff of some of our allies in the matter of the technique of the warfare then being waged proves that the law should have been passed many years before it actually was enacted and that, having once taken the step in the direction of creating a modern army, nothing that the nation could have given should have been withheld that would have perfected the machine in every detail of technique, equipment and supply. In the words of Washington, what we need is not a large army, "*but a good one.*"

The Land Forces.

The militia. In considering the composition of our national land forces it is convenient to start with the militia, for reasons that will be shown by a definition of that term.

The organic law of May 8, 1792, entitled "an act more effectually to provide for the national defense, by establishing a uniform militia throughout the United States," prescribed that "each and every free, able-bodied, white male citizen of the respective states, resident therein, who is or shall be of the age of 18 years, and under the age of 45 years shall, severally and respectively, be enrolled in the militia by the captain or commanding officer of the company within whose bounds such citizen shall reside."

By the act of May 27, 1908, it was prescribed that "the militia shall consist of every able-bodied male citizen of the respective states and territories and the District of Columbia, and every able-bodied male of foreign birth who has declared his intention to become a citizen, who is more than 18 and less than 45 years of age, and shall be divided into two classes: *The organized militia*, to be known as the National Guard of the state, territory, or District of Columbia, the remainder to be known as *the RESERVE MILITIA*." The law then exempts certain persons, such as the Vice-President of the United States, officers of the Government, members of Congress, members of the military or naval service of the United States, etc., from militia duty without respect to age, in order that there may be no interference with essential activities of the government.

The fundamentally important thing about both of these laws is the declaration that all able-bodied citizens between the ages of 18 and 45 years *owe to the nation a duty of military service*. In no uncertain terms these laws say, of a man of foreign birth who has declared his intention to become a citizen of the United States, that if he would be a citizen he must assume all of the obligations and that one of them is military service.

It is thus seen that the body of male citizens referred to constitute the *MILITARY MAN-POWER RESOURCE* of the country, the development of which into *MILITARY MAN-POWER STRENGTH* is provided for by the creation of a Regular Army and an organized militia or National Guard. The manner in which the remainder of the militia, the great bulk of the citizens who are subject to military service, shall be called into that service is left for the decision of the moment when the occasion for their employment shall arise.

That declaration is no more nor less than the truly democratic principle of "*equality of civic obligation*" which is the twin sister of "*equality of civic rights*." In its application to the national military organization it means equal obligation to perform military service in defense of the state which, among virulent nations, has always been one of the proudest *distinctions of citizenship*.

The principle has been frequently proclaimed in acts of Congress. It is in its application that its promise of national solidarity has failed. In the Revolutionary and Civil Wars the principle was applied in the form of draft laws, which, however, emasculated the doctrine by the insertion of a provision whereby the rich were enabled "to escape the blood tax—the service in war—through their ability to buy others to take their places in the ranks."

We refer to the practice of buying substitutes which was so severely denounced by Washington in his letter to the President of the Massachusetts Council as already recorded in a previous lesson. The disadvantage in which the citizens who compose the unorganized militia are placed by the procrastinating policy which calls them into the military service at the eleventh hour, unprepared to meet the physical and moral strains of war, is too obvious to require comment.

The organized militia. Another significant characteristic of the law of May 27, 1908, was the provision whereby persons in the federal, military and naval services and certain others engaged in important occupations essential to the orderly conduct of governmental functions as well as officials of the executive, judicial and legislative branches of the government were exempted from militia service.

In the early legislation on this subject the military man-power resource of the nation was enrolled in the militia *without regard for the needs of the federal government* with the result that, as we have previously put it "Congress tied up, so to speak, the military man-power resource of the young nation into 12 packages and delivered to each colony the one labeled with its name. Thereafter, in order to get men for the Regular Army, the military force upon which the destinies of the United States were to depend, it was necessary for Congress to go as a suppliant to the states."

Other provision of the law of 1908 required that the organized militia should have the same organization, armament, and discipline as the Regular Army. The President was empowered to fix the minimum number of enlisted men to be required in each organization of the organized militia, to call into the service of the United States such numbers of National Guard organizations as he might deem necessary to meet the requirements of public emergencies, and to determine from which state or states, territory or territories the National Guard, so called, should be furnished. This last-mentioned provision was a *wise economic measure*, enabling the executive to take the required quotas from localities adjacent to the point of danger and to call out additional forces, from more distant localities, as the need for them might become apparent. The same law provided that the President should fix the term of service of the National Guard when called into the federal service, thus fixing the responsibility for any repetition of the fiasco of the first battle of Bull Run, and it further made provision for the issue of arms and equipment and the detailing of officers of the Regular Army to act as instructors to the National Guard organizations.

The Regular Army. The law of 1908 reorganized the Regular Army but, inasmuch as fuller consideration will be given to this component of the national military organization, we will make no further mention of it at this time but pass on to the period of the World War as defined at the opening of this lesson.

Trouble with Mexico. One of the most effective influences for the betterment of our military preparedness arose from a cause entirely independent of the efforts of our legislators or military advisors. Since 1911 the "Mexican situation," as our troubled relations with that country has been designated, had gradually called for a greater proportion of the Regular Army on the southwest frontier. The administration had persistently refrained from intervention in Mexican affairs since the expedition to Vera Cruz in 1914 and was exhibiting an apparently inexhaustible patience under most aggravating circumstances which might have continued indefinitely but for the interception in the spring of 1916, by the military authorities on the border, of a Mexican document containing a plan for a raid of the states of New Mexico and Arizona, and an invasion of Texas with a view to the capture of San Antonio and the return of the territory comprised by our southwestern states, to Mexico.

Public attention having thus been brought sharply to the danger threatening a large section of the country, remained fixed upon the military events that followed and in this way was brought to a *realization of the actual state of the land forces*.

The interception of the Mexican plan presented a military situation calling for immediate action. Accordingly the National Guard was called out and sent to the border to reinforce the regular troops. This mobilization was sufficient to check the designs of Mexico. It also had a most enlightening value for it demonstrated to the administration and to the people our deplorable state of weakness. At the same time it afforded an opportunity of which advantage was taken, *to instill training* among all the troops on the border and thus, in a measure, paved the way for the Herculean task later to confront the War Department when it was called upon to mobilize and prepare hundreds of thousands of citizens for service in France.

Comparative statistics. "During the Civil War 2,400,000 men served in the northern armies or in the navy. In that struggle 10 in each 100 inhabitants of the Northern States served as soldiers or sailors. The American effort in the war

with Germany may be compared with that of the Northern States in the Civil War by noting that in the present war we raised twice as many men in actual numbers, but that in proportion to the population we raised only half as many."

"It would be interesting and instructive to make comparisons between the numbers in the American Armies during the present war and those of France, Great Britain, Italy, and Germany, but unfortunately this is most difficult to do fairly and truly. The reason for the difficulty lies in the diverse military policies of the nations.

"It was the policy of France, for example, to mobilize and put into uniform most of the able-bodied men in the population who were not beyond military age. Some of these were sent into the combat forces and services of supply of the active armies. Thousands of others were put to work in munition factories. Others worked on railroads or cultivated their farms. In general, it was the policy of the Government to put its available man power into uniform and then assign these soldiers to the work that had to be done, whether it was directly military in nature or not.

"In the United States it was the policy to take into the army only those men who were physically fit to fight and to assign them, save in exceptional cases, only to work directly related to the ordinary duties of a soldier. The work of making munitions, running railroads, and building ships was done by men not enrolled in the armed forces of the nation.

"The policies of the other governments were all different from the two just described. These are the reasons why accurate international comparisons of armies will not be possible until figures are available showing the numbers and lengths of service of the men in the combat forces of the different nations rather than the figures now at hand showing the total numbers called to the colors and placed on the rolls."

The American Expeditionary Force and the British Expedition Force. "There is, however, one comparison which may fairly be made. That is the comparison between the American Expeditionary Forces and the British Expeditionary Forces. Both countries devoted their major efforts to building up and maintaining their armies in France. The results are shown in (Plate 28), which shows the strength of the two forces at different dates.

"The British curve mounts rapidly at first and falls off in the latter part of the period. The American starts slowly and then shoots up very rapidly. The British curve is generally convex in shape and the American concave.

"The British sent to France many more men in their first year in the war than we did in our first year. On the other hand, it took England three years to reach a strength of 2,000,000 men in France and the United States accomplished it in one-half of that time.

"It must, however, be borne in mind that the British had to use men from the beginning to fill gaps caused by casualties, while the American forces were for many months built up in strength by all the new arrivals."

"The most difficult feature of the American undertaking is to be found in the concentration of the major part of the effort into the few months of the spring and summer of 1918. When the country entered the war it was not contemplated in America, or suggested by France and England, that the forces to be shipped overseas should even approximate in numbers those that were actually sent.

"It was not until the German drive was under way in March, 1918, that the Allies called upon America for the supreme effort that carried a million and a half men to France in six months. Plate 29 shows the number of soldiers in the American Army each month . . . and the number who were overseas.

"When war was declared there were only 200,000 in the army. Two-thirds of these were Regulars and one-third National Guardsmen who had been called to federal service for duty along the Mexican Border. When the war ended this force had been increased to 20 times its size and 4,000,000 men had served.

¹ Our casualties were 322,182. The casualties in the British Army were 3,049,971—a million more than we sent—and of these 658,704, were killed. Mr. Owen Wister in "A Straight Deal on the Ancient Grudge," published by the Macmillan Company, 1920.

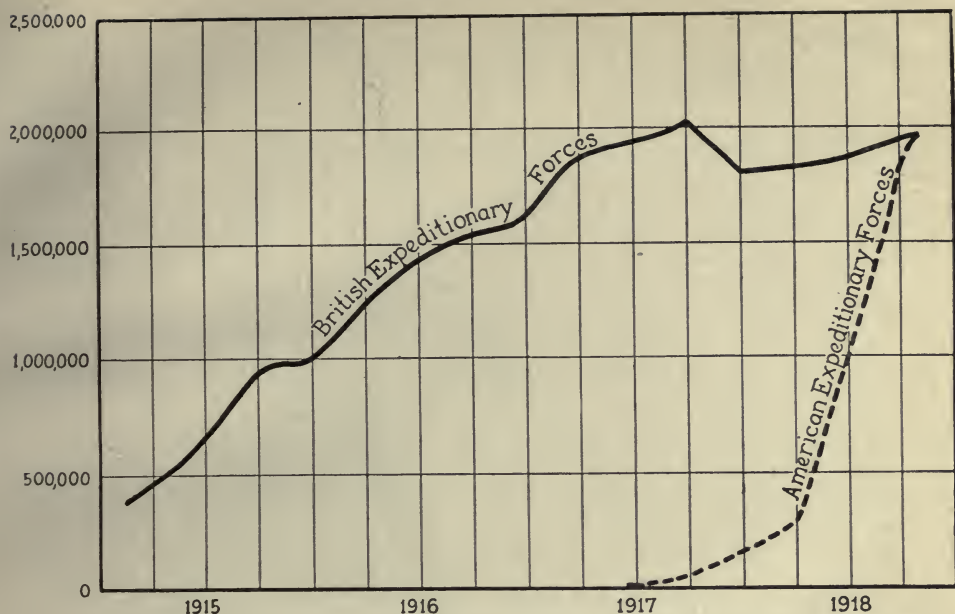


PLATE 28.—British and American Expeditionary Forces on the Western Front.

"After the signing of the armistice, demobilization of troops was begun immediately. As Plate 29 indicates, more than 600,000 were discharged during December. Forces in this country were at once cut to the lowest point consistent with carrying on the storage of equipment and settlement of contracts, and the discharge of men returning from overseas. In spite of time necessary for the return of overseas forces, demobilization was carried forward more rapidly in proportion to the numbers under arms than in any previous American war."

"Plate 30 shows the three sources from which the army came. More than half a million came in through the Regular Army. Almost 400,000 more, or nearly 10 per cent, entered through the National Guard. More than three-quarters of all came in through the selective service or National Army enlistments. Of every 100 men 10 were National Guardsmen, 13 were Regulars, and 77 belonged to the National Army, or would have, if the services had not been consolidated and the distinctions wiped out on August 7, 1918."

"The willingness with which the American people accepted the universal service draft has already been commented upon in a previous lesson. The history of that law is well known. It was the greatest act of our national legislature during the entire course of the war. One authority has characterized the draft act as "one of the greatest milestones in our national evolution, and one that future historians will class with the drawing up of the constitution and the preservation of the Union."

The Selective Service.

"The selective service law was passed on May 19, 1917, and as subsequently amended it mobilized all the man power of the nation from the ages of 18 to 45, inclusive. Under this act, 24,234,021 were registered and slightly more than 2,800,000 were inducted into the military service. All this was accomplished in a manner that was fair to the men; soldiers were supplied to the army as rapidly as they could be equipped and trained, and the plans adopted resulted in a minimum of disturbance to the industrial and economic life of the nation.

"The first registration, June 5, 1917, covered the ages from 21 to 31. The second registration, one year later (June 5, 1918, and August 24, 1918), included those who

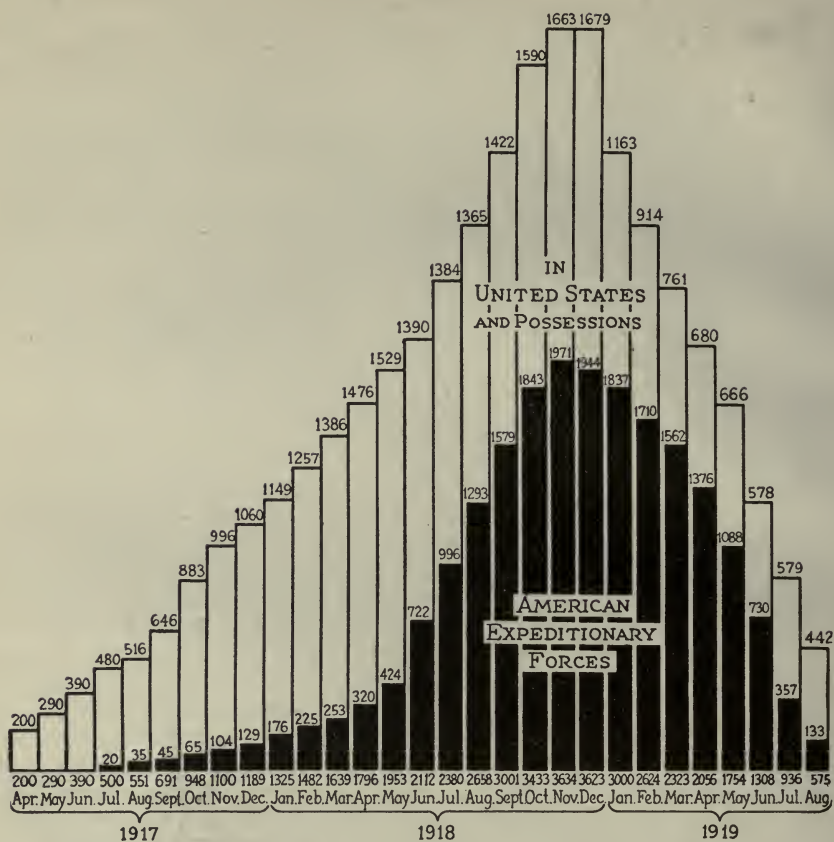


PLATE 29.—Thousands of Soldiers in the American Army on the First of Each Month.

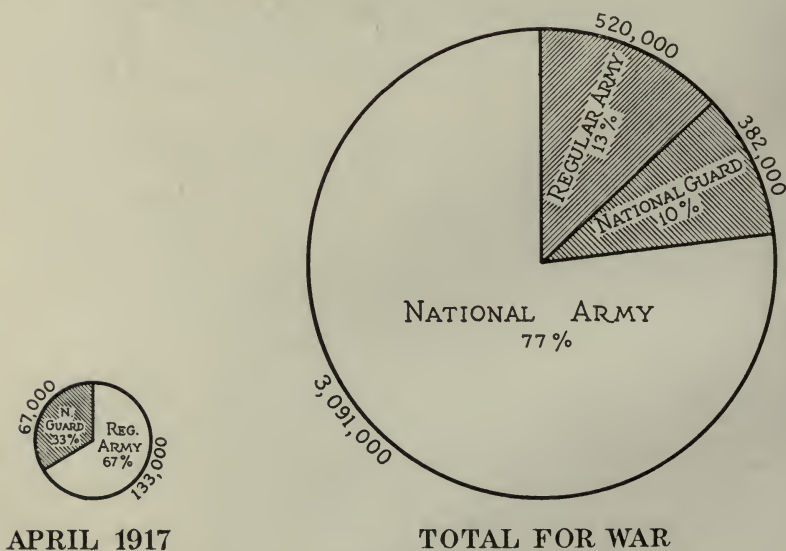


PLATE 30.—Sources of the Army.

had become 21 years old since the first registration. The third registration (September 12, 1918), extended the age limit downward to 18 and upward to 45. The total number registered with the proportion who were actually inducted into the service is shown in the following table:

TABLE SHOWING MEN REGISTERED AND INDUCTED.

Registration	Age limits	Registered	Inducted	Per cent inducted
First and second.....	21 to 31	10,679,814	2,666,867	25
Third.....	18 to 45	13,228,762	120,157	1
Alaska, Porto Rico, Hawaii.....	18 to 45	325,445	23,272	7
Total.....	18 to 45	24,234,021	2,810,296	12

"At the outbreak of the war, the total male population of the country was about 45,000,000. During the war some 26,000,000 of them, or about one-half of all, were either registered under the selective service act or were serving in the army or navy without being registered. Plate 31 shows the percentage of the male population who were included in each of the registrations and the proportion who were not registered.

"The experience of the Civil War furnishes a basis for comparing the methods used and the results obtained in the two great struggles. This comparison is

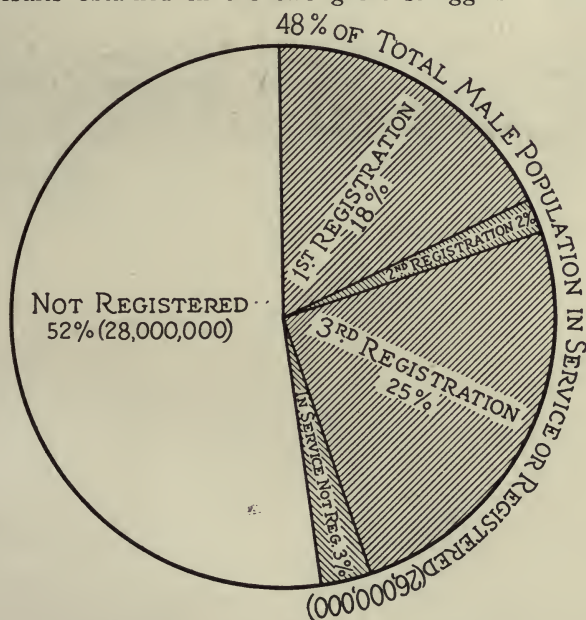


PLATE 31.—Male Population Registered and Not Registered.

strikingly in favor of the methods used in the present war. During the Civil War large sums were paid in bounties in the hope that by this means recourse to the draft might be made unnecessary. This hope was frustrated and the draft was carried through by methods which were expensive and inefficient. This may be summed up by noting that during the war with Germany we raised twice as many men as we raised during the Civil War, and at one-twentieth of the cost. This does not mean one-twentieth of the cost per man, but that 20 times as much money was actually spent by the Northern States in the Civil War in recruiting their armies as was spent for the same purpose by the United States in the war with Germany. In

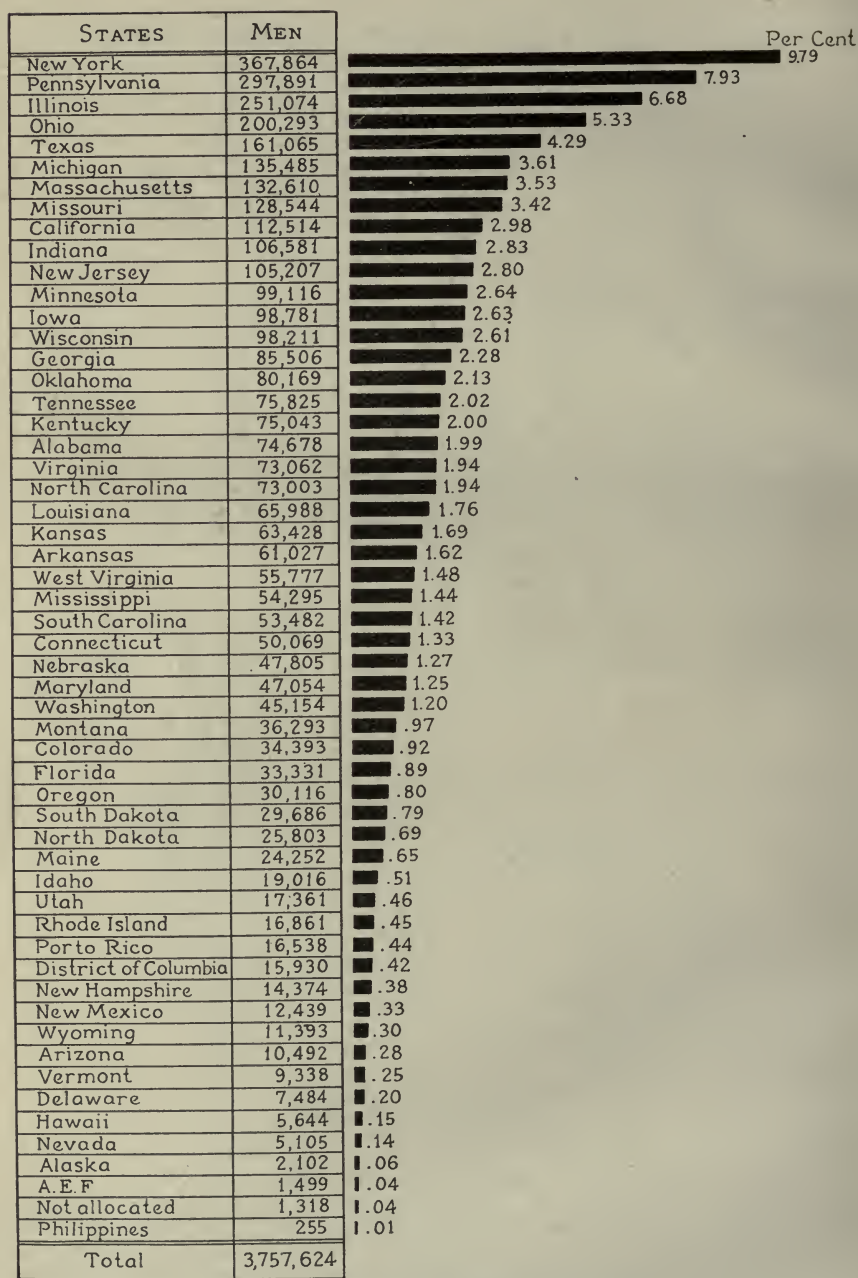


PLATE 32.—Soldiers Furnished by Each State.

200,000 officers. "About 200,000 commissioned officers were required for the army. Of this number, less than 9000 were in the federal service at the beginning of the war. Of these, 5791 were regulars and 3199 were officers of the National Guard in the federal service.

A summary of the results obtained is shown in Plate 32, which gives the number of soldiers (not including officers) furnished by each state. The percentages are

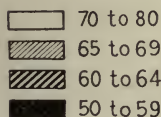


PLATE 33.—Per Cent of Drafted Men Passing Physical Examination, by States.

The student has now been supplied sufficient information and data to be able to appreciate the significance of the statements made in previous lessons that "the problem of military organization has two aspects, a dynamic aspect and a political aspect" and that "we are concerned more with the time required to raise the force of trained troops than with their ultimate numbers." If the facts with which he has become acquainted in this course of study have meant anything to the student, they must have aroused in him a desire to see the military establishment of his native land put upon an equitable and efficient basis. He has probably noted several particulars in which he feels competent to suggest remedial measures. It is hoped that our students are now of the opinion that the problem of a correct military policy is one for which a solution must and can be found. It must be borne in mind that the correct solution of that problem is one in which every home in the land is directly and vitally concerned and that is a national problem in which every citizen, man and woman, must take a personal interest, not leaving the burden entirely to their statesmen and military advisors.

The question of a correct military policy for the United States will be discussed in our next lesson.

FIFTEENTH LESSON.

A PROPER MILITARY POLICY FOR THE UNITED STATES.

(Based on a Staff Study.)

Need for Common Knowledge of the Subject.

The question of what constitutes a proper military policy for the nation is a problem for the highest civil and military authorities, its solution calls for statesmanship and professional military knowledge of the highest order, yet, like many other problems of government that are studied in our civil education institutions, it is one with which all of our citizens should be familiar to a degree which will enable them to appreciate its nature and scope, to form an intelligent opinion upon the question, to judge of the merits of solutions that may be proposed from time to time in the national legislature, and *to cooperate efficiently as a citizen in whatever system may be adopted by the constituted authorities.*

The Scope of the Problem.

If the premise be accepted which was stated in an earlier lesson, that "the economic existence of any people must depend upon the power of its government to protect the national interests"—it becomes evident that:

1. The government must have *sufficient powers of all kinds* to insure its ability to meet any situation that may arise in which the national interests are involved.
2. The government must *be able to use* the particular power, or combination of powers, appropriate to the situation.
3. The economic welfare of the nation requires that the degree of the particular power, or combination of powers, used by the government *shall be sufficient* to protect the national interest involved and *not in excess of the requirements.*
4. To fulfill the foregoing effectively, appropriately, and economically the government must have all of the necessary means *prepared in advance* and ready to meet the situations that may reasonably be expected to arise.

The numbers and kinds of means and the degree to which they should be used will depend upon the nature of the situation and may vary from *the exchange of diplomatic courtesies* to the employment of *the highest degree of moral or physical force of which the nation is capable.*

The military means of a government are normally the last ones employed. Their use implies that all other means have been exhausted and the use of military force will properly be resorted to as the culmination of a constantly increasing power starting with the lesser and gradually involving the greater means at the disposal of the government. From this statement the scope of the problem of *national military organization* is apparent.

The Nature of the Problem.

"The problem of military organization has two aspects:

1. A dynamic aspect by which is meant a capacity to exert superior military force *in time to meet any given national emergency*; and,
2. A political aspect by which is meant the requirement that the form of military institutions must be determined on political grounds, *with due regard to national genius and tradition.*

A sound solution of the problem demands that these two natural aspects be fully recognized and treated as of equal and fundamental importance."

The Dynamic Aspect.

"Capacity to exert superior military force involves time, place, numbers, equipment, and material. The national military *man-power strength* must provide an army at any time and place strong enough to defeat any enemy that may be brought

against it *at that time and place*. The material military resources of the nation must provide equipment *sufficient and available as needed* to arm, transport, feed, and supply the army at such times and places as may be called for. It must be recognized as a fundamental fact of history that *victory is the reward of superior military force and that trained armies alone can defeat untrained armies*; therefore, capacity to exert superior military force is more dependent upon the time required to raise the force of trained troops and to place them where needed than with their ultimate numbers. If we need 60,000 soldiers in a given place within 30 days and can only deploy 50,000 soldiers in that place and time, we are not prepared for the emergency even if our plans provide for ten times that number at some period in the future.

"Again, military strength is more dependent upon the state of training than upon the numbers of the troops." If we require 10,000 *trained* troops in a given place and time to meet a *trained* enemy, we are not prepared for the emergency even though we are able to deploy 100,000 *untrained* troops in that time and place. Therefore the test of a nation's capacity to exert superior military strength involves its *preparedness to readily utilize its maximum military resources* or such portion thereof as may be necessary in a given time and place.

The Time Required to Raise Armies.

"If military training is postponed until after the outbreak of war the untrained individual who may be called upon to fight, instead of being an asset to his country, is a liability for a period which none put at less than six months and few at less than a year."—SIDNEY BALLOU.

In the great majority of cases only a portion of the national military strength will be called for. However, since the nation may at any time be called upon to exert its maximum military strength no solution of the problem of military organization can be considered sound which does not provide for the utilization of that degree of force in the most economical and effective way.

"It would be unnecessary and destructive to economic progress to keep a majority of the population under arms in times of peace. The ordinary military requirements of the nation should be determined and suitable provisions should be made to meet them by maintaining an adequate proportion of the population in the form of a standing army in a state of readiness to meet emergencies requiring only a fraction of the national military strength. The maintenance of armies in time of peace imposes a heavy financial burden upon the nation, and the expenditures for this purpose should be kept at a minimum *consistent with effectiveness for war*. The problem, therefore, requires that means be devised for preparing great armies of citizen soldiers to meet the greater emergencies.

"The organization of the standing or regular army is but a small phase of the problem. It is simply the peace nucleus of the greater war army, and its strength and organization should always be considered with reference to its relation to the greater war force which cannot be placed in the field until war is imminent. *The problem is one of expansion from a small peace force to a great war force*. Its solution therefore involves the provision of a sufficient peace nucleus, the partial organization and training of citizen soldiers in peace, and provision for prompt and orderly expansion on the outbreak of war.

"The time required for the training of extemporized armies depends largely on the presence or absence of trained instructors." By trained instructors is meant a body of officers and non-commissioned officers themselves *thoroughly trained in the most recent theories and practices of war as developed by the most energetic nations*.

It is absolutely essential for success in war that the doctrines and technique of the Regular Army, *which is the national repository of military knowledge*, shall at all times be kept in a state of advanced efficiency.

"The numbers of such trained instructors that may be available at any given time will determine the *speed* with which the greater war forces can be prepared and

the numbers of troops that can be trained within a given time. It is a function of the Regular Army to provide the trained instructors and in order that this may be done it is necessary that the army organization shall provide *a sufficient number of officers and non-commissioned officers to furnish commanders and leaders for the regular forces and instructors for the citizen soldiery.*

"The training of the citizen soldiers must be taken up and continued in time of peace in order that they may take the field at the earliest possible moment when war becomes imminent. Troops of this class must be brought to the highest state of efficiency possible under peace conditions and their officers *must be trained* in their duties. The organizations in which they are to serve *must exist and function* in time of peace, and in view of the limited time available for training it should be a fundamental American policy that *no officer should be intrusted with the leadership of American soldiers who has not prepared himself for that responsibility.*" Therefore, the leaders must be selected in time of peace and trained and educated for their duties.

"It will never be possible for citizen soldiers to acquire *thorough* military training and experience in time of peace. Their training and hardening must be completed after mobilization, but the period required for such final training will be reduced *exactly in proportion to the amount of training already given in time of peace.* If the total peace training of a National Guard company is equivalent to two months in the field, it will be available for duty at the front two months earlier than a company of *raw* men, assuming other conditions equal in each case; but in any event during the period of final training, which will vary for different companies and regiments, the Regular Army must meet the situation at the front. If our citizen soldiery is put on a proper basis as to organization and training, its regiments will soon reinforce the line. Even with their limited peace training they will soon be effective for *defense*, and after a period of field practice the best-officered organizations will begin to expand the Regular Army *for general military purposes.*"

The Political Aspect.

"It is the traditional policy of the United States that the military establishment in time of peace is to be a small regular army and that the ultimate war force of the nation is to be a great army of citizen soldiers. This fundamental theory of military organization is sound economically and politically. But reliance upon citizen soldiers is subject to the limitation that they cannot be expected to meet a trained enemy until they, too, have been trained. *There can be no sound solution of the problem if this fundamental principle be ignored.* The practical military statesman must recognize all of the elements of the problem. He should not propose impracticable or foreign institutions but seek to develop the necessary vigor and energy within the familiar institutions that have grown with the national life."

The problem is one of *national organization* and includes:

1. Provision for the fulfillment of the guarantees of the Constitution both as to the *preservation* of a democratic form of government to the several states of the union and to the nation as a whole. The *protection* of the rights, privileges, and benefits of citizenship both at home and abroad.
2. Determination of the military needs of the nation for *domestic* purposes and *foreign* relations.
3. Equitable adjustment of the *military establishment* to the *burdens of taxation.*
4. Equitable distribution of the *public duty of military service* among the whole population and classification of the population for *public service of all kinds* in time of emergency.
5. Development and organization of *all resources* for the training and education of the population for military service in defense of the nation.
6. Determination, classification, and development of the *national material resources* for military purposes.

Two Classes of Citizen Soldiers, Organized and Unorganized.

"The traditional army of citizen soldiers should be considered as divided into two distinct classes as follows:

1. The *organized citizen soldiery*, comprising those who are enrolled in definite military organizations and are partially trained in peace. This force is now known as the National Guard, the Naval Militia and the Organized Reserves, organized under the National Defense Act of June 3, 1916, as amended by the act of June 4, 1920.

2. The *unorganized citizen soldiery*: In this class are included all the able-bodied citizens liable for militia duty, but who are not enrolled as members of the National Guard or the Organized Reserves.

In the past the citizens liable for military duty have served the federal government under four distinct conditions: *First*, by being enrolled in a militia regiment which had been or was to be mustered into the service of the United States; *second*, by being enrolled in a state volunteer regiment; *third*, by being enrolled in a United States volunteer regiment; *fourth*, by being enrolled in the army of the United States by operation of the Selective Service Law."

"As the *trained armies* of modern nations will seek a decision in the early stages of war, and as *extemporized armies* will rarely be fit for use within the brief duration of such a conflict, it is obvious that our military policy should aim at increasing the peace strength and efficiency of the organized citizen soldiery. It should always be the goal of sound policy to form the proper units in peace so that the war contingent of raw recruits can be *absorbed into trained teams already in existence*. This policy must be based upon the principle that a nation's *military strength* is to be measured not by the total number of its male citizens capable of bearing arms, but by the number of *trained soldiers with which it can meet a given emergency*."

Relation of the Regular Army to the Nation's War Power.

"From a general consideration of our institutions and the requirements of modern war it appears that the Regular Army is simply the peace nucleus of the greater war army of the nation. Its strength and organization should therefore be determined by its relation to the larger force. It must form a definite model for the organization and expansion of the great war army, and it must also be prepared to meet sudden and special emergencies which cannot be met by the army of citizen soldiery. Some of the special functions of the Regular Army are as follows:

1. The *peace garrisons of the foreign possessions* of the United States must be detachments of the Regular Army.

2. The *peace garrisons of our fortified harbors* and naval bases must be regular troops.

3. The peace establishment of the Regular Army must be *sufficient to prevent naval raids*, which under modern conditions may precede a declaration of war. A successful raid of this character may determine the initiative by giving the enemy a convenient base for future operations.

4. The Regular Army must form a *mobile reserve* prepared to reinforce the foreign garrisons during periods of insurrection and disorder.

5. The Regular Army must be prepared to *furnish expeditionary forces* for minor wars or for the occupation of foreign territory where treaty rights or fundamental national policies are threatened.

6. The Regular Army must be prepared to *cooperate with the Navy* in the formation of joint expeditions in support of the foreign interests of the United States and for the protection of American citizens abroad.

7. At the outbreak of war regular forces must be *concentrated and ready* to seize opportunities for important initial successes. Such opportunities will frequently be offered before the mobilization of the army of citizen soldiers can be completed.

8. At the outbreak of war *special regular detachments* should be ready to seize important strategic positions before they can be occupied or adequately defended

by the enemy and before the concentration of the army of citizen soldiers is complete. Initial operations of this kind, such as seizing the crossings of a river frontier or a port of embarkation, frequently determine the future conduct of war and assure an early decision. Capacity to take the initiative with an effective force is the best preventive of war.

9. By its definite organization in peace the Regular Army becomes *the nucleus of the great war army*. By its peace practice, its varied experience on foreign service, and its participation in expeditions the Regular Army becomes the *experimental model* of the war army. It solves practical problems of equipment, armament, and supply, and makes its technical experience in these matters available for the larger force which is normally absorbed in peaceful occupations. It makes our war problems one of definite and orderly expansion instead of the vastly more difficult problem of extemporization.

10. The Regular Army will furnish *a school of military theory and practice and will develop officers* with special equipment and training for the higher staff duties in war.

11. Through its professional schools and General Staff the Regular Army will develop the *unified military doctrine and policy* which must permeate the entire National Army if it is to succeed in war.

12. Through its administrative and supply departments the Regular Army in peace will *prepare in advance* for the equipment, transportation, and supply of the great war army of the nation."

Joint Use of the Regulars and Citizen Soldiery.

"The *division* is the fundamental army unit in which the several arms are combined for joint action in the field. It is essentially a small army complete in itself and capable of independent action. Larger forces, such as *corps*, are simply aggregations of two or more *divisions*, with such addition auxiliaries as may be required for the particular terrain and mission.

"The details of division organization are different in different countries, but the essential idea is that *a division is a force of infantry* provided with a proper proportion of field artillery and supported by certain special units which are concerned with the special problems of field engineering, communication, transportation, supply, and sanitation.

"This is pointed out because different theories of organization have been proposed in this country from time to time and among them the idea has appeared of mixing regular troops and citizen soldiers in the same division. It has been proposed to form divisions comprising two brigades of regulars and one brigade of citizen soldiers, or one brigade of regulars and two brigades of citizen soldiers, with various other combinations of these two classes of troops. A slight consideration will show the fundamental defects of this system.

"In this first place, regular troops may and frequently will be dispatched on special missions *before the citizen soldiery is called out*. If the normal division includes both classes of forces, every time the regular troops are detached to perform *their special functions* one or more of the divisions of the normal organization will be disrupted.

"Again, while *trained* citizen soldiers will be fully effective in war, it cannot be disputed that at the outbreak of war regular troops will have *more training, greater endurance*, and therefore *higher maneuvering velocity*.

"But a division is a fundamental army unit.

"If the regulars are formed in separate divisions, we will have a small force with the *endurance* and *velocity* necessary for the sudden strategic enterprises which determine the initiative in war. These divisions can move at once and can even be put in a favorable initial position for striking a blow at the very outbreak of war. They can be quietly concentrated in many cases before diplomatic and political conditions justify the calling out of the National Guard or the Organized Reserves. But if these forces are the component parts of *mixed divisions* they cannot move

as divisions at all, until the citizen soldier contingents of the division are embodied, and when they do move, the velocity and endurance of the mixed divisions will be determined by the conditions of their newly mobilized elements.

"Under such an organization it will be impossible to utilize the special qualities of the highly trained nucleus, except at the expense of disrupting the normal organization at the very outbreak of war."

"It is presumed that the main reason for suggesting the placing of regiments of citizen soldiers in brigades with regular regiments, or the placing of citizen soldier brigades in divisions with regular brigades, is to give raw troops the example of trained troops on the march and in battle. This will undoubtedly be an advantage in special cases, but it should not be made the basis of permanent organization. It should be our policy to develop our citizen soldiers in peace, *so that they will no longer be raw troops when they meet the enemy*. Acceptance of this policy will not preclude the adoption of special measures to meet special occasions where raw troops must be employed to the best advantage.

"Even on the defensive, where untrained troops have always shown to the best advantage, it would seem that regular troops should not be completely dispersed in the trenches, but should be used as a reserve to repulse the main attack or to make an offensive counterstroke if an opportunity offers. Jackson's troops at New Orleans were able to hold an intrenched position with protected flanks, *but he had no troops with sufficient organization or training to complete the victory by a vigorous pursuit of the defeated enemy*."

Correct Organization of Our Forces.

We may therefore accept the following general principles as the basis of correct organization of our mobile forces:

"1. The mobile elements of the Regular Army should have a divisional organization in time of peace. This requires that it be organized in tactical divisions, even if these divisions be incomplete and insufficient in number. Even a small army should be *correctly organized as an army*.

2. Every effort should be made to give a divisional organization to the organized citizen soldiery in time of peace. When our citizen soldiers go to war they must be organized in divisions before they can be employed effectively against the enemy. In order to employ them promptly, *every possible detail of this organization should be settled in time of peace*."

"A paper organization will not suffice. *A division is not a division unless it actually exists as a corporate body*. All of the elements must be present and one of the most essential of these is a commander of appropriate rank who must have a staff through which the command, control, and direction of the troops composing the body of the division becomes possible. The troops represent the body of which the division commander is the head and the division staff may be likened to the nervous and circulatory systems which nourish, vitalize, direct and control the body. Therefore, if we would succeed in war, our divisions and their commanders and staffs must be brought together and must learn to function as divisions in every respect as they will be required to do in war and this can only be accomplished in peace by maneuvers and exercises.

"A division commander who does not know his business or a division staff that does not know its business can cause far more suffering and loss to the nation than ten times their number of inefficient regimental commanders.

"If it is a maxim of American policy that none but thoroughly competent commanders shall be allowed to lead companies, battalions, and regiments, then it should be insisted upon with even greater determination that none but officers of the highest qualifications shall command our divisions or serve on the division commanders' staffs.

"In order to make the divisional organization of our citizen soldiery effective there must be *actual organization*.

"Each of the units from the company up to and including the division must have its *headquarters*, its *commander* and *subordinate officers*, its *non-commissioned officers* and *privates*, each with proper equipment so located that it can be taken out for use when needed without delay or confusion. Each man must know where to go and what to do when he receives notice that his unit is called out. Each superior commander must know *where* to find his subordinate commanders and each subordinate commander must know how to reach his men with the least effort and delay. Each commander must know *to whom he is to look for orders* and *what is to be done in the absence of orders*.

"A definite, well-arranged and very simple plan must be adopted for everything. The plan must be one which will work; hence, it must be one that has been *tested* and found to be the best."

Maintenance of Strength in War.

"An army is an expensive machine maintained in order to support national interests in time of emergency. The economic efficiency of an army should therefore be measured by the *effective fighting power* which it is proposed to develop and maintain in war. It must not only be able to develop a high fighting efficiency at the outbreak of war, but it must be able to *maintain* that efficiency during the progress of the campaign.

"As soon as war begins military forces are subject to heavy losses, and unless means are definitely provided for replacing these losses the military machine will immediately deteriorate. The losses in war are not only the losses in battle, but losses due to disease and losses due to the hardships of campaign. The Prussian Guard Corps in its marches to Sedan (Franco-Prussian War, 1870) lost 5000 men on the march alone. It was necessary for the corps to arrive at the battlefield in time, and that required a velocity of march that was more destructive than battle. It should be remembered that the soldiers in this force were trained soldiers and that the guard corps arrived and fought at Sedan in spite of its march losses. A force of soft or raw troops could not have arrived at all.

"Careful training is necessary to prepare troops for war; but it must be recognized that wastage will occur and that if a really efficient force is to be maintained *trained men* must be supplied to replace this wastage.

"It is the experience of modern warfare that any given unit loses at least 50 per cent of its strength in the first six months of war. If this loss is not replaced, there is 50 per cent deterioration in the power of the unit; and if it is replaced by raw men the quality of the force as a highly trained team is destroyed.

"*This problem has an important economic aspect that has been ignored throughout our military history.* Military forces are maintained at great expense through long periods of peace in order to meet a brief emergency in war. Sound economics, therefore, demands that the peace expenditure be justified by unquestioned war efficiency.

"A company of infantry with three officers should contain the maximum number of riflemen that three capable officers can command. This maximum appears to be about 150 men; but if the company starts in the campaign with 150 men the natural wastage of war will immediately reduce it below that number. If the vacancies are not filled, it ceases to be an economical company, because under these conditions we have a less number of men than three trained officers should control; and, on the other hand, if the vacancies are filled by untrained men, the company ceases to be a trained team, as under these conditions the three officers cannot effectively command 150 men in action."

The Solution of the Problem.

"The solution of this problem is very simple and it is a significant fact that the same solution has been adopted in all modern armies. What is required is an adequate *reserve of trained men*, prepared to take their places in the organized teams, to replace losses while and until the less trained or raw recruits are being put in condition to join the colors.

"As losses occur at the front they are filled first by forwarding trained men from the depots, and if the number of these is sufficient new recruits are not forwarded until after they have had a sufficient period of training. The result is that even in a long war, which would ultimately require the services of thousands of raw recruits, it is so arranged that no man goes to the front until he is trained for active service and sufficiently *hardened* and *disciplined* to bear the stress of modern war. Under such a system the full energy of military activity can be maintained up to the limit of available recruits. *Each unit works at the maximum of its efficiency, and the war power of the nation is developed with the minimum expenditure of life and money.*"

"This is not only sound military policy but sound economy, as it insures a *reasonable preparedness* for war, interferes to the least extent with the civil and industrial pursuits of the individual; in fact, sends him back to civil life a more valuable individual factor because of his better physique, his improved mental and physical discipline, and with a better respect for the flag, law and order, and constituted authority. It is in accord with our institutions and ideals, in that it gives us the trained citizen soldier with the minimum of time taken from his industrial career. It keeps our officers alert and progressive and it gives us back of the first line, consisting of the Regular Army and the National Guard, a body of trained soldiers ready for immediate service, 10 of whom can be maintained for the cost of one man with the colors. In brief, short periods of military training for all members of our militia which, according to national tradition and existing law "consists of all able-bodied male citizens of the United States and all other able-bodied males who have or shall have declared their intention to become citizens of the United States, who shall be more than 18 years of age and, . . . not more than 45 years of age, and said militia shall be divided into three classes, the National Guard, the Naval Militia, and the Unorganized Militia."

SIXTEENTH LESSON.

PRACTICAL EXERCISES FOR THE CLASS ROOM.

Note for the instructor. Whereas occasional tests are of material advantage to the instructor and to the student since they enable the former to measure with a fair degree of accuracy the progress made by the student, and the latter to ascertain his errors, it is considered that successful instruction will not be accomplished unless the student has given the subject of his study a *positive degree of thought*. By "*thought*" we mean a conscious mental effort of constructive nature beyond and distinct from the mere repetition of impressions received from even the most conscientious reading of a text.

It is the object of true instruction to produce the conditions which will require thought. Various methods have been found of value for this purpose among which the *oral quiz*, the *written test*, and the "*examination*" are common forms. It is to be noted that none of these expedients will have the essential result and hence will not be of value for the purpose unless they are by nature objective, that is to say, they must place the student in such a situation with respect to the subject that he will be obliged to perform an operation, physical or mental or both in order to show the degree of knowledge required for proficiency.

In the military services it is axiomatic that the greatest school for war is war itself, without meaning to imply that war is desirable. What is meant is that in the acid tests of war men are forced to apply their faculties to the solution of the problems presented under conditions in which evasion will seldom if ever avail and under the pressure of necessity true knowledge of the art of war is quickly acquired. In consequence of this fact military instruction in recent years has largely taken the applicatory form in which the military student is confronted by real or imaginary situations resembling as closely as possible the actual conditions of war, thus, in tactical exercises the student learns to lead troops by actually leading them and his errors of judgment or disposition can be demonstrated to him on the ground. The same advantage, though less positively, is characteristic of the war

game as an expedient for teaching tactics and in the map-problem method the student is confronted with an imaginary situation calling for the exercise of his mental powers.

We believe that a form of the applicatory method can be usefully employed in the teaching of military history and that its use will add greatly to the interest of the subject and that it will serve to impress upon the student's mind important facts that otherwise might easily be forgotten soon after examinations and, further, that it is in thorough accord with the true purpose of instruction. Therefore, this lesson has been reserved for an opportunity to suggest to the instructor that the class be called upon to debate some question suggested by significant facts of the military history of the United States, and the following is offered as one method which may be found expedient.

The instructor should adopt or devise a method suitable to his class and to the facilities at hand or procurable. It is most important that the method adopted be one in which the instructor feels a lively interest.

Exercise No. 1.

(For a small class of even numbers.)

Preliminary arrangements. a. Divide the class into two equal parts.

b. Designate one part to *defend*, the other to *attack* the question. This gives the affirmative and negative sides customary in formal debate.

c. Designate a *captain* or principal for each side. This may be done by the instructor or by ballot.

d. Secure the services of a suitable number of qualified and disinterested persons to act as judges. Members of the faculty, particularly professors of history would be most suitable.

e. Announce the names of the judges to the class.

f. Furnish the subject for debate to all members of the class and to the judges well in advance of the date set for debate.

g. Set the date for the debate designating the place and hour.

h. Announce the conditions, such as the number of minutes to be allowed each side for its presentation, rebuttal, etc., and make it a requirement that *all of the members of each team shall take an active part.*

Procedure. Proceed in accordance with the parliamentary rules applicable to formal debate. Be sure that the *decision* resulting from the debate is definitely announced as soon after the termination of the exercise as possible. Ordinarily it will be announced before the class is dismissed.

Exercise No. 2.

(For a small class of odd numbers.)

Preliminary arrangements. a. Same as in Exercise No. 1. Assign the *odd* member to one of the sides, announcing that at the time of the debate one member will be drawn from that side to act as presiding officer.

b, c, d, e, f, g, and h same as in Exercise No. 1.

Procedure. When the class has assembled for the debate withdraw one member, *other than the captain*, from the side having the odd number and appoint him to occupy the chair of the presiding officer. Otherwise proceed as in Exercise No. 1.

Exercise No. 3.

(For a large class of odd or even numbers.)

Preliminary arrangements. a. Same as in Exercise No. 1. Assign the *odd* member, if any, to one of the sides. Announce that the debating teams will actually consist of four (or any convenient number) on each side and that all members in excess will be withdrawn to act as judges when the class assembles for the debate. *Do not indicate who will be withdrawn until the hour for debate.*

b and c same as in Exercise No. 1.

d. When the class assembles for the debate withdrawn all excess members not required on the teams, *excepting the captains*, and appoint them judges. One may be appointed to occupy the chair as presiding officer.

e. The names of the judges cannot be announced until the class meets for the debate.

f. Furnish the subject for debate to all members of the class.

g and h same as in Exercise No. 1.

Procedure. Proceed as in Exercise No. 1, first appointing the excess members as judges and one to occupy the chair as presiding officer.

Other methods for conducting the exercise will suggest themselves to the instructor. The following are offered as sample *questions* suitable for debate:

"Resolved, that a standing army supplemented by universal military service is the safest guarantee of the liberties of a nation under a democratic government."

"Resolved, that the safety of our national institutions is dependent upon universal military service in time of war therefore the Government should provide for universal military training in time of peace."

"Resolved, that it is the sense of this class that our national military history shows that voluntary enlistment cannot be relied upon to maintain large armies during prolonged wars therefore our national military organization should provide for an adequate standing army to be expanded in time of war by the selective service draft system."

ADMINISTRATION.

TABLE OF CONTENTS.

FIRST LESSON.

GENERAL NOTES.

GENERAL INSTRUCTIONS.

Prescribed methods only to be used.

The term "company," "separate company" and "detached company" defined.

Abbreviations.

Company records, reports and returns.

Company records, reports and returns for a separate or detached company or when the company is acting alone.

MILITARY CORRESPONDENCE.

THE OFFICIAL LETTER.

Heading, subject and number of letter.

Body.

Signature.

Omission of ceremonial forms.

Indorsements.

Numbering of pages.

Folding.

Carbon copies.

Assembling papers.

Routing of papers.

THE CORRESPONDENCE BOOK.

Entries in the body of the book.

Entries in the index.

Filing and disposition.

DOCUMENT FILE.

Purpose and contents.

Filing papers.

Elimination of obsolete items.

Filing and disposition.

DAILY COMPANY REPORTS.

The morning report.

The morning report as the basis of other reports.

Forms for morning reports.

By whom prepared and to whom submitted.

Headquarters morning reports.

Morning report day.

Attached and casual officers and enlisted men.

Remarks.

Name and grade.

Date and hour of change.

Change of grade.

Assignment.

Transfer.

Changes in command.
Extra and special duty.
Sickness.
Arrest and confinement.
Detached service.
Absence with leave.
Absence without leave.
Missing in action.
Attachment.
Resignation, discharge and dismissal of officers, and death, desertion,
discharge or retirement of enlisted men.
Return of deserter to military control.
Authentication.
Station or location.
Record of events.
Additional sheets.
Use of indelible pencil and red ink.
Computation of rations on the morning report.
Filing of morning reports.

SECOND LESSON.

THE SICK REPORT.

Company sick report.
The company officer's report.
Each day's entry to be complete.
The medical officer's report.
Change in status of those whose names appear on the sick report.
Line of duty.
General orders No. 31, W. D., 1912.
Erasures.
Filing.

THE DUTY ROSTER.

Roster for guard duty.
Roster for other duties.
Preparation and amendment of roster.
Abbreviations prescribed for duty rosters.
Exceptions.
Filing.

COMPANY COUNCIL BOOK.

Contents.
The company fund.
Instructions for keeping and administering the fund.
Inspections.
Funds deposited in bank.
Property purchased.
Company council of administration.
Filing.

COMPANY ORDERS.

Contents.
For detached companies.

SERVICE RECORD.

Opening of service record.
Forwarding to first station.
Transmission to company.
Soldiers transferred or detached.
Data to be included in indorsements on,

Disposition of record of a soldier discharged, etc.

Temporary service record.

Procedure in case of lost service record.

Changes in entries.

Additional space for entries.

Initialing entries.

Decorations, service medals and citations.

Allotments and insurance.

Filing.

EXTRACT FROM SERVICE RECORD.

Function.

Filing.

THIRD LESSON.

INDIVIDUAL EQUIPMENT RECORD.

Entries for property issued.

Entries for property turned in.

Transferring to new record.

Action to be taken when soldier is separated from his company.

Transferred or detached.

Desertion.

Discharged or retired.

Death.

Discharge other than honorable.

Filing.

REPORT OF CHANGE.

Preparation and rendition of.

Remarks entered in report.

Certain changes in duty and status not to be reported on.

MONTHLY ROSTER OF TROOPS.

Preparation of rosters.

Disposition of rosters.

COMPANY STRENGTH RETURN.

Instruction for preparation of.

Disposition of copies of return.

Rendition of returns.

Filing.

PAY ROLLS.

Procedure when company is detached.

Procedure when company rejoins regiment or station.

Signing and extension of pay rolls.

Deposits.

Company collections.

Procedure after payment.

Payment by express or check.

Part collection of stoppages.

DEPOSITS.

Soldiers deposit book.

Advice of soldiers deposit.

FOURTH LESSON.

SOLDIERS ALLOTMENT.

Classification of allotments.

Blank forms for preparation of allotments.

Instructions for preparation of allotment.

Discontinuance of allotment.

DISCHARGE OF ENLISTED MEN.*Discharge certificates.**Instructions for preparation of discharge certificates.***FINAL STATEMENTS.***Instructions for preparation of.**Data to be stated under "Remarks" on.**Final statement of a soldier returned from desertion.***Final statement of a soldier upon retirement.**Final statement of a deceased soldier.**Final statements not furnished in certain cases.**Travel allowances upon discharge.**Notification of discharge.***FIFTH LESSON.****FURLOUGHS.****REPORT OF DEATH.****INVENTORY OF EFFECTS.****LEAVES OF ABSENCE.****OFFICERS PAY VOUCHERS.****THE RATION RETURN.***Definition of a ration.**Classes of rations.**The garrison ration.**The travel ration.**The reserve ration.**The field ration.**The Filipino ration.**The emergency ration.**Components and substitute equivalents.**Preparation of ration returns and issue of rations.**Purchase of articles from outside sources.***PROPERTY ACCOUNTING.***Definition of "accountability" and "responsibility."**Record of property in use by organizations and by enlisted men for duty with organizations.**Responsibility of company officers.**Responsibility of individual officers and enlisted men.**Requisitioning property.**Shipments and issues of property.**Receiving issues of equipment by organizations.**Receiving property turned in by organizations or individuals.**Accounting for lost, damaged, or destroyed property.**Cases where survey is required.**Preparation and use of certificates or affidavits, in lieu of survey.**Statement of charges.**Preparation of reports of survey.**Replacement of lost, damaged, or destroyed property.**Property accounts of organizations.**Action taken when there is a change of organization commanders.**Transfers to other organizations.**Transfers of enlisted men.**Expendable property.**Accounting for ammunition.**Accounting for china and glassware.*

SIXTH LESSON.

APPLICATION AND CO-ORDINATION.

Change of grade.
Gains by transfer or assignment.
Loss by transfer.
Arrest.
Confinement.
Special duty.
Sickness.
Detached service.
Leave of absence.
Furloughs.
Absence without leave.
Discharge.
Death.

COMPANY FIELD DESK.

Use of the field desk prescribed.
Company field desk A.
Company field desk B.
Filing cards.
Service record tray.
The miscellaneous record tray.
The "reminder."
Memoranda.
Clothing.
Public animals.
Correspondence book and document file.
Company council book.
Property records.
Individual equipment record.
Five-year file section.
Target records.
The permanent file.
Regulations, etc.
Blank forms.
Stationery.
Packing the desk.

ADMINISTRATION.

FIRST LESSON.

GENERAL NOTES.

The subject of Administration is of such magnitude that an entire book could be written on it alone. We have endeavored, in these lessons, to give the student instructions only in the subjects that are to be encountered in the ordinary *administration of a company*.

The standard blank forms used in Army Administration, with the notes and directions thereon, have the force and effect of Army Regulations. This should be impressed upon the minds of the students and they should be required to carefully follow out all notes and directions in the preparation of reports, returns, etc.

A sufficient number of blank forms should be procured, if practicable, to provide each student with a complete set. The forms should be arranged in a folder in the order in which they are to be taken up in the text and the students required to fill them out as they receive instruction, acting first as a company clerk in filling them out and then as a company officer acting on the completed form. At the completion of the course each student will thus have a ready reference set of blank forms.

After the forms given herein are covered, practical exercises should be given requiring the application and co-ordination of the various forms dealt with in specific routine cases encountered in company administration, such as a remark to the class that "Pvt. Smith's enlistment expires to-day, what action is necessary and what forms must be accomplished?" Similar practical work should be given covering all forms in the text.

Paperwork is an essential feature of the Army. Efficiency in paperwork is required by regulations and should not be slighted. Do the work correctly and it ends there, whereas if it is done in a slipshod and careless manner it only requires additional time and trouble to correct it, thus taking not only the time of officer and men allotted to other duties, but creating bad impressions with superiors as well.

Army paperwork and administration must necessarily differ from that used by commercial firms. Specific rules and regulations must be specifically observed. Much unnecessary paperwork is caused by ignorance of proper methods of procedure, submitting carelessly (incorrect and incomplete) papers, failure to submit papers at the proper time, etc.

A new officer in the service often gets bewildered with the problems of administration of his organization and in certain formalities that he personally has to adhere to in connection with his pay accounts, leave of absence, etc. By giving a reasonable amount of energy and time to the subject the student can easily master it.

GENERAL INSTRUCTIONS.

Prescribed methods only to be used. The method of keeping records in companies, instructions for use of blank forms used in Company Administration, and the method of using the Company Field Desk prescribed in regulations will be strictly adhered to. The use of books, cards or slips of paper for the purpose of keeping or recording data pertaining to company records, except as provided for in regulations is prohibited. The records will be kept up-to-date at all times so far as the exigencies of the service permit.

The term "Company" defined. a. Whenever the term "company" is used it will be understood to apply with equal force to a troop, battery or other unit or detachment similar to a company in organization or administration.

b. A *separate* company is one which is not a part of a regiment, separate battalion or similar unit, *e. g.*, Division Headquarters Troop, Engineer Train, etc.

c. A *detached* company is one which is part of a regiment, separate battalion or similar unit but is detached and serving away from headquarters of the regiment, separate battalion or similar unit. A company detached from its regiment, but serving with a battalion of which it is a part, or serving with a provisional battalion, is considered as a separate company when rendering returns, but not separate with reference to pay rolls or reports of change.

Abbreviations.

Abbreviations used in the preparation of records, reports, returns, etc., except those prescribed for the Duty Roster, will conform to the following: (Extracts from Special Regulations No. 56.)

Absent without leave.....	AWOL	Headquarters Company	Hq Co
Adjutant	Adj	Honorably Discharged	Hon Disch
Adjutant General's Office.....	AGO	Inclosure	Incl
Allotment	Almt	Inclusive	Inc
Allotted	Alot	Indorsement	Ind
Allowances	Alws	In hands of Civil Authorities	
Appointed	Aptd	In hands C Auth	
Appointment	Apmt	Joined	Jd
Army Regulations	AR	Killed	Kd
Articles of War.....	AW	Line of duty.....	LD
Assigned	Asgd	Marksmen	Mm
Assignment	Asgmt	Memorandum	Memo
Battalion	Bn	Memorandum Receipt	MR
Bulletin	Bul	Miscellaneous	Misc
Character	Char	Month	Mo
Circular	Cir	Noncommissioned officer	NCO
Commanding Officer	CO	Not in line of duty.....	Not LD
Company	Co	Paragraph	Par
Company Commander	Co. Comdr	Personnel Adjutant	Pl Adj
Company Orders	O	Platoon	Plat
Confined	Conf	Post Exchange	PE
Confinement	Confm	Post Hospital	P Hosp
Corporal	Corp	Private	Pvt
Detached Service	DS	Private, first class.....	Pvt 1cl
Detachment	Det	Qualified	Qual
Discharge or Discharged.....	Disch	Quartermaster	QM
Dishonorably Discharged.....	Dishon Disch	Quarters	Qrs
Enlisted	Enl	Reappointed	Reaptd
Enlisted Man	EM	Received	Recd
Enlistment	Enlmt	Recruit	Rct
Excellent	Ex	Reduced	Rd
Expert Rifleman	ER	Reenlisted	Reenl
Expiration term of service.....	ETS	Reference	Re
Extra Duty	ED	Regiment	Regt
Field Orders	FO	Regimental	Regtl
First Sergeant	1st Sgt	Regimental Special Order.....	RSO
Forfeit	Forf	Regular Army	RA
From	Fr	Relieved	Reld
Furlough	Fur	Requalified	Requal
General Court Martial.....	GCM	Same date	sd
Guard	Gd	Secretary of War.....	Sec War

Section	Sec	Squad	Sqd
Sentence	Sent	Statement of Charges.....	S of C
Sentenced	Sentd	Summary Court	SC
Sergeant	Sgt	Surgeon	Surg
Sharpshooter	Ss	Surgeons Certificate of Disability..	SCD
Sick	Sk	Transferred	Trfd
Soldier	Sol	Troop	Tr
Special Court Martial.....	Sp CM	Unassigned	Unasgd
Special Court Martial Order..	Sp CMO	Verbal Orders	VO
Special Duty	SD	Voucher	Vou
Special Orders	SO	Warrant	Wrent
Special Regulations	SR	Warrant Officer	Wrent off

Company Records, Reports and Returns.

The following are the principal records, reports, returns, papers, etc., that are required to be kept in companies for purposes of administration:

- a. Morning Report (Form No. 332 AGO).
- b. Daily Sick Report (Form No. 339 AGO).
- c. Duty Roster (Form No. 342 AGO).
- d. Correspondence Book (Form No. 662 AGO), and Document File.
- e. Company Council Book (Form No. 452 QMC).
- f. Service Record for each enlisted man (Form No. 29 AGO).
- g. Extract from Service Record for each enlisted man temporarily detached or permanently separated from the company (Form No. 29a AGO).
- h. Individual Equipment Record for each enlisted man (Form No. 637 AGO).
- i. Company Orders (made on ordinary paper and filed serially).
- j. Organization Equipment Record.

Company Records, Reports and Returns for a Separate or Detached Company or When the Company is Acting Alone.

The following records, reports, returns, etc., are required, in addition to those specified above, from a separate or detached company or when the company is acting alone:

- a. Report of Change.
- b. Monthly Roster of Troops.
- c. Monthly Strength Return.
- d. Payroll of Company.

MILITARY CORRESPONDENCE.

The following system is prescribed for use in military correspondence:

THE OFFICIAL LETTER.

Heading, subject and number of letter. The letter will begin with the place and date, below this beginning at the left margin (one inch from edge of paper) will come the word "From," followed by the official designation of the writer, or in the absence of any official designation, the name of the writer with his rank and regiment, corps or department, below this, also beginning at the left margin the word "To," followed by the official designation or name of the person addressed. Next will come the word "Subject," also beginning at the left margin. The subject will be indicated as briefly as possible in not to exceed ten (10) words. *A letter should never contain more than one subject.* The words "From," "To" and "Subject" will begin on the same vertical line. The sending office number will appear in the upper left hand corner. The matter described under this heading will constitute the "Brief" of the letter. In case of letter paper, the upper third, and in case of foolscap, the upper fourth of the sheet will be devoted solely to the matter described above.

←————— 8" —————→

↑
1''
↓

WAR DEPARTMENT
The Adjutant General's Office
Washington

$\leftarrow 1'' \rightarrow \infty.62 \text{ ROTC}$

December 1, 1920.

From: The Adjutant General of the Army.

To: Professors of Military Science.

Subject: Annual Report.

$\frac{1}{3}$
sheet
†
↓

1. It is requested that the data indicated by the headings on the accompanying form relative to the graduates of your institution in 1920 be furnished this office on or about December 15, 1920.

By order of the Secretary of War:

(Written signature) Harrison Hall,
(Printed or typewritten) Harrison Hall,
Adjutant General.

1 inclo.

60.62 ROTC 1st Ind.
HQ. THIRD CORPS AREA, Baltimore, Md., Dec. 2,
1920.—To Professor of Military Science and Tactics,
The Johns Hopkins University, Baltimore, Md.

For compliance.

By command of Major General CRONKHITE:

(Written signature) E. R. Householder,
(Printed or typewritten) E. R. Householder,
Adjutant General,
Asst. Corps Area Adjutant.

—I—

10 1/2"
‡

† $\frac{1}{4}$ sheet foolscap.
‡ Foolscap 13".

OFFICIAL LETTER.

Body. Then will come the body of the letter which, when typewritten, will be single spaced, with double space between paragraphs, which will be numbered consecutively. The first paragraph to begin one space below the first fold. Only one side of the paper will be used, the writing to begin one inch from the top on second and succeeding pages.

Signature. The body of the letter will be followed by the signature. When the rank and regiment, corps or department appear at the beginning of the letter, they will not appear after the signature, *i. e.*, if Captain H. K. Smith is in command of Co. A, 65th Infantry, and writes a letter in that capacity it would be "FROM: Comdg. Officer, Co. A, 65th Infantry" and signed H. K. Smith, Captain, 65th Infantry; but if he wrote one as "FROM: H. K. Smith, Captain 65th Infantry" he would simply sign his name H. K. Smith. The name of the signer will be typewritten or printed from five to seven spaces below the last line in the body of the letter. The signature will be plain, just above the typewritten or printed name of writer, and all official communications will be authenticated by pen. The use of colored inks, except as carmine or red ink is used in annotation, ruling or compliance with specific instructions issued by the War Department on blank forms or otherwise, is prohibited in the records and correspondence of the Army.

Omission of ceremonial forms. All ceremonial forms at the beginning and end of letters such as "Sir," "I have the honor," "I would respectfully," "Very respectfully," etc., will be omitted.

Indorsements. The writing width of indorsements will be the same as that of letters. The first indorsement will begin about one-half inch below the signature of the writer of the letter and succeeding indorsements will follow one another serially with a space of about one-half inch between indorsements. When typewritten, indorsements will be single spaced, with double space between paragraphs. The serial number of the indorsement, the place and date, and to whom written will be shown. Should one or more additional sheets be necessary for indorsements sheets of the same size as the letter will be used.

Numbering of pages. The pages beginning with the first will be numbered midway about one-half inch from the bottom. In referring to an indorsement by number the number of the page will also be given—thus, 5th Ind., page 3.

Folding. Letter paper will be folded in three and foolscap paper in four equal folds, parallel to the writing. The top fold will be folded toward the back of the letter and the lower fold over the face of the letter. When folded only the brief of the letter will be visible.

Carbon copies. Two carbon copies of all letters and indorsements that are typewritten will be made and disposed of as follows: One copy will be forwarded with the original letter and one retained in the office of origin for the records thereof. When the original letter is returned to the office of origin the carbon copy will be removed from the Document File and destroyed and the original filed in its stead. Where letters are forwarded through Regimental or Post Headquarters the Regimental or Post Commander may direct that an additional carbon copy be forwarded for filing in the records of his office.

Assembling papers. In cases that are acted upon by indorsements the original letter should be placed on top, followed by the action taken, numbering the indorsements in sequence. The carbon copies should then be attached with clips. If more than one communication is written pursuant to a subject, each communication with its carbon copies is attached by a clip independent of the clip that binds the whole case. Be sure to have papers securely fastened with clips and neatly arranged. *The secret of success in Military Correspondence is ACCURACY and NEATNESS.*

Routing of papers. Papers will be forwarded to the next higher administrative authority until it reaches its destination. The Battalion Commander, except the commander of a separate or detached battalion, will be omitted from the channel for personnel communications, other than officers' efficiency reports, relating solely to individual officers, warrant officers and enlisted men, and not disciplinary in nature, except officers commanding companies and officers and enlisted men assigned or attached to battalion headquarters.

THE CORRESPONDENCE BOOK.

Correspondence Book, Form No. 662 AGO. The correspondence book consists of an alphabetical index and numbered pages for entry of items of correspondence. The alphabetical index and numbered pages for entry of items of correspondence are hereinafter referred to as the "index" and as the "body" of the book, respectively. All entries in the correspondence book, both in the index and body, will be made in ink whenever practicable, but when pen and ink are not available, entries may be made with indelible pencil.

Entries in the body of the book. a. An entry will be made in the body of the book for each item of correspondence in respect to which a record in the company is necessary and for which the method of recording and filing is not otherwise provided. No record will be made beyond the mere fact of origin or receipt and disposition in respect to the following:

1. Papers not pertaining to the administration of the company, such papers should be transmitted forthwith to the proper place for action.
2. Mere letters of transmittal; such letters when received will be destroyed forthwith.
3. Request for and acknowledgment of receipt of publications and blank forms.
4. All other communications that have no permanent value and that are finally disposed of by answers thereto.

b. Entries will be numbered serially, beginning with number one. The same series will be continued from year to year and from one correspondence book to another as books are filled and filed.

c. When an item itself and notation of action taken thereon are completely represented by carbon copy in the document file, the entry of the item in the body of the book will be limited to (1) the number of the item, and (2) the abbreviation "Doc," thus,

" 1301

Doc."

d. When an item itself and notation of action thereon are not completely represented, or only partially represented, by carbon copy in the document file, the entry of the item in the body of the book will include (1) the number of the item (2) brief statement of contents of so much of the item and action taken thereon as are not represented by carbon copy in the document file, and (3) if any part of the item is represented by carbon copy in the document file, the abbreviation "Doc," thus,

" 1302 Application of Lt Jones for Lv 2 mos

Doc "

The abbreviation "Doc" will not be made, however, unless some part of the item of action taken thereon is represented by copy in the document file.

e. When a communication is received which has been entered previously in the correspondence book it will not be re-entered ordinarily, but the record will be continued under the former entry. But when the space for continuing the record is not sufficient under the former entry, or when it becomes desirable to transfer a remote entry to one of current date, a new entry will be made and given a new serial number. In either case the notation "See No ——" will be made under the old entry and the old number shown in parenthesis after the new in the new entry, thus "976(349)."

f. Normally a space of one blank line will be left after each original entry, but more space will be left if the nature of the communication indicates that one line will not be sufficient for the purpose of continuing the record.

Entries in the index. a. Each item entered in the body of the book will be indexed under its subject and under the names of the writer of the communication and the persons mentioned therein. When many communications are received from the same officer, e. g., The Adjutant General of the Army, the adjutant of the regiment, etc., the name of the writer need not be indexed if it is found that the index of subjects or persons mentioned in the communication answers all practical purposes.

b. The indexed entries will bear numbers corresponding to those of the items of the body of the book.

Filing and disposition. The current correspondence book will be filed in the miscellaneous tray of the company field desk in rear of the section headed "Horses." When correspondence books are filled and no longer current they will be placed in the permanent file.

DOCUMENT FILE.

Purpose and contents. The document file supplements the correspondence book. It will contain the original documents or communications, or legible copies thereof, together with originals or copies of letters, indorsements, and telegrams sent or received relating to the same. The file will also contain copies of letters, indorsements or telegrams originating in the company office. When the original of any paper becomes available for file in place of a filed copy the latter will be replaced and destroyed. Any additional notations on the copy must be noted on the original.

Filing papers. a. The papers in the document file will be numbered to correspond with the numbers of the items in the body and index of the correspondence book, and will be filed according to their serial number. When more than one paper pertaining to the same item is placed on file the papers will be placed in an envelope, if practicable, and the number of the item noted thereon. Papers differently numbered or on a related matter may also be kept together when desirable, but if so kept a reference slip must be inserted to account for the paper's absence from its serial place.

b. The serial numbers in the document file will not be complete, but whenever a paper is filed therein the abbreviation "Doc" will be placed after the entry in the body of the correspondence book.

Eliminating obsolete items. a. To prevent an accumulation of unnecessary or obsolete "documents" in the file an annual inspection of the document file will be made by the company commander, who will at such inspections eliminate from the file all items which have become obsolete or unnecessary of retention for future reference. Great care will be taken not to remove items relating to the history of the organization or individuals, or matters of future value or records, etc., which should be filed in the five year, or permanent file.

b. When documents are eliminated from the file the abbreviation "Doc" in the body of the correspondence book will be lined out and the date and initial of the company commander inserted.

Filing and disposition. The current document file will be filed with the current correspondence book in rear of the section headed "Horses" in the miscellaneous tray. It should be kept in an envelope or folder marked "Document File." After the annual inspection and elimination and at such other times as may be desirable, such parts of the document file as have ceased to be of current importance but are to be retained will be transferred to the permanent file, preferably segregated by years in envelopes marked, *e. g.*, "Document file, 1919 Nos. 104 to 156." These envelopes should be placed with the closed correspondence book to which they pertain when it becomes a part of the permanent file.

DAILY COMPANY REPORTS.

The Morning Report.

The Morning Report as the basis of other reports. The Company Morning Report is a daily history of the company. It is permanently preserved and furnishes basic information for other company records and for reports and returns rendered to the War Department. Great care should therefore be used in the preparation of the Morning Report to the end that errors be eliminated.

Forms for Morning Reports. Every officer and enlisted man of the Army on the active list, and every retired officer and enlisted man on active duty, except individual officers detached and serving alone, will be accounted for daily on a Morning Report. Two forms for Morning Reports are provided, *viz.*:

Company Morning Report (Form No. 332 AGO);

Headquarters Morning Report (Form No. 334 AGO).

By whom prepared and to whom submitted: Company Morning Reports. By companies, troops, and batteries of all arms, corps, and departments, and all other units, establishments, and institutions similar in organization and administration to a company, except headquarters companies and troops of regiments, Engineer and Coast Artillery Bands, and detachments of enlisted specialists of the Coast Artillery Corps and headquarters detachments. Company Morning Reports are submitted to the commanding officer of the regiment, separate or detached battalion, or similar unit, or in case of detached or separate companies and detachments to the commanding officer of the next higher administrative unit, or of the post, camp, or other station.

Headquarters Morning Reports. By headquarters of armies, army corps, divisions, brigades, regiments, separate and detached battalions, posts, camps, stations, etc. This report is provided for the purpose of accounting for all officers and enlisted men not belonging or attached to a company organization or to a detachment using a Company Morning Report. Headquarters or Administrative Companies and Troops of regiments and Engineer and Coast Artillery Bands are carried on this Morning Report.

Morning Report Day. The morning report day is the period from midnight to midnight. The Morning Report will show by tabulation the condition of the company, detachment, etc., at the end of the day covered by the report; and by appropriate explanatory remarks, all changes in duties and status of officers and enlisted men that occurred during the day. The remarks for each day should account for all changes in figures on the face of the report for that day.

Attached and casual officers and enlisted men. In preparing Company Morning Reports, the following instructions in regard to attached and casual officers and enlisted men will govern.

a. Attached officers and enlisted men belonging to other companies or detachments of the same regiment, separate battalion, or other similar unit will be shown in *red ink* in the columns for "Attached" and "Attached for Duty." All other officers and enlisted men will be shown in *black ink figures*. In case the company morning report is submitted to the post or other station commander instead of to a regimental, separate battalion or similar unit commander, the red ink figures in these columns will include attached officers and enlisted men belonging to the same post or station. Such attached officers and enlisted men will be reported as on special duty on the morning report of the companies to which they belong.

b. Enlisted men shown in the column "Attached for rations only" will be accounted for on some other company or headquarters morning report of the regiment or other similar unit or of the post or station.

Remarks.

In the column for remarks will be carefully recorded all changes of duty and status of officers and enlisted men as follows:

1. *Name and grade.* The surname only will be recorded in the column of remarks, unless there are two or more officers or enlisted men with the same surname in the company or detachment, in which case the initials will follow the name. When there are two or more enlisted men of the same surname and initials in the company or detachment, the Army Serial Number will be stated after the name and the initials omitted.

Examples: a. "Pvt Smith duty to hosp."

b. "Pvt Smith E. T., duty to hosp."

c. "Pvt Smith 114,768, duty to hosp."

When the same remark is to be recorded concerning two or more individuals of the same grade their names will be grouped and their grade indicated only once.

Examples: a. "Pvts Henderson, Johnson and Smith duty to arrest."

b. "Pvts 1cl Johnson and Smith and Pvts Henderson and Jones, AWOL to conf."

2. *Date and hour of change.* In case of a change of duty or status that occurred on a date prior to that covered by the report, the actual date of the change will be stated. The absence of a date after a remark indicates that the change occurred on the date covered by the report. The hour a change of duty or status occurs will not be stated except when necessary to determine "Strength for Rations" as explained hereafter.

Examples: a. "Duty to hosp." (Usual form of remark.)

b. "Duty to hosp Mar 15/21." (Form of remark in case the soldier was admitted to hospital on a date prior to that of the report.)

c. "Duty to hosp 4:00 P. M." (Form of remark when soldier is admitted to hospital at an hour other than that at which the daily sick call is held.)

3. *Change of grade.* All changes of rank or grade will be stated. If the officer or enlisted man is not for duty on the date of the change of rank or grade, his actual status will be indicated.

Examples: a. "Corp Caswell aptd Sgt."

b. "Corp Bruce rd to Pvt."

c. "Corp Coswell aptd Sgt on SD."

d. "Corp Bruce rd to Pvt, SC, arrest to duty."

4. *Assignment.* The fact of assignment and whether or not the enlisted man or officer has joined the command, and if not, his status, will be noted.

Examples: a. "Pvt Ball asgd to and joined Co."

b. "1st Lt. Wilson asgd to Co. DS enroute to join."

When a single entry involves a number of individuals, a general entry may be made, as below, since in this case the Personnel Adjutant is already in possession of the names. Should it appear advisable to record the names on the Morning Report they may be appended in the "Record of Events" for the day with suitable reference to the entry under "Remarks."

c. "14 Rcts asgd to and joined Co."

5. *Transfer.* The organization, corps, department or station from which or that to which transferred will be given, together with a statement showing whether or not the officer or enlisted man has joined his new command, and if not, his status. *A transfer will take effect on the date of the receipt of the order at the post where the soldier is serving.* When a single entry involves a number of individuals a general entry may be made under the same conditions as stated above under "Assignment."

Examples: a. "Pvt Daniels trfd to 15th Inf., attached for duty."

b. "Pvt Daniels trfd to 15th Inf., left Co."

c. "Pvt Webster trfd fr Co. B, joined."

d. "Pvt Johnson trfd fr 56th Depot Brig. DS enroute to join."

e. "1 Sgt, 2 Corps, 16 Pvts trfd to 66th Inf left Co."

In the case of a soldier sentenced to dishonorable discharge and confinement and, if the dishonorable discharge be suspended, the entry would be for instance:

f. "Pvt Mason absent in conf to trfd to Det of General Prisoners, USDB Ft Leavenworth Jul 20/20."

6. *Changes in command.* All changes in command will be stated.

Examples: a. "Capt Smith asgd to, jd and assumed comd. Lt Jones reld comd."

b. "Capt Smith duty to hosp. Lt Jones assumed comd."

c. "Lt Jones reld comd, duty to SD. Lt William assumed comd."

7. *Extra and special duty.* The assignment to, or relief from, any extra or special duty that removes an officer or enlisted man from the performance of the usual and customary duties of his office or grade will be stated. *Special duty to be performed in addition to the usual or customary duty will not be noted.* The nature of the extra or special duty to be performed will not be stated on the Morning Report.

Examples: a. "Pvt Barksdale duty to SD."

b. "Corp Cook, SD to duty."

c. "Pvt Allen SD to sk in hosp."

8. *Sickness.* All cases of sickness will be stated, and when the sickness is the result of an injury or wound a brief statement of the nature of the wound or injury, part of body received in, whether serious or not, and whether or not contracted in line of duty. This data is taken from the Company Daily Sick Report. In reporting the departure of an officer or enlisted man to enter a general hospital, or a hospital at another post, camp or station, or in reporting his return therefrom, the name or location of the hospital will be stated. When a soldier in confinement is taken into hospital the officer of the day will notify the soldier's company commander of the exact status so that the change can be made on the Morning Report.

Examples: a. "Sgt Wilcox duty to sk in qrs."

b. "Pvt Wallace duty to hosp 3:00 PM."

c. "Pvt Wallace hosp to duty."

d. "Pvt 1st Cl Jones hosp to sk in qrs."

e. "Corp Dodd duty to hosp, injured slightly in head during bayonet training. LD."

f. "Pvt Woods duty to hosp, wounded in action, shot in head, serious. LD."

g. "Corp Dodd hosp to absent sk Walter Reed Gen. Hosp."

h. "Pvt Adams absent sk Ft Jay, NY to duty."

i. "Pvt Jones conf to conf hosp."

9. *Arrest and confinement.* All cases of arrest and confinement will be stated. In case of arrest or confinement at another post, camp, or station, the name of the post, camp or station will be stated. In case of confinement by civil authorities, the remark will show the nature of the offense and whether the prisoner has been held for trial, tried or discharged without trial; and when tried, whether acquitted or convicted. When a soldier in confinement in hospital is returned to confinement the officer of the day will notify the soldier's company commander.

Examples: a. "Corp Arnold duty to arrest."

b. "Corp Arnold rd to Pvt. SC, arrest to duty."

c. "Pvt Jordan duty to conf."

d. "Pvt Wilcox arrest to conf."

e. "Pvt Wilcox conf to enroute to conf at Wash Bks, DC."

f. "Pvt Hall duty to absent in hands CAuth, Baltimore, Md., held for trial on charge of larceny."

g. "Pvt Hall absent in hands CAuth, Baltimore, Md., to duty, released without trial."

10. *Detached service.* All absence on duty exceeding 24 hours, with place of absence, will be stated. Duty with another organization at the same post or station will be reported as special duty and not as detached service.

Examples: a. "Pvt Cunningham duty to DS at Ft Porter, NY."

b. "Pvt Cunningham, DS at Ft Porter, NY, to duty."

11. *Absence with leave.* Departure and return will be stated in all cases of absence of officers with leave and of enlisted men on furlough. The period of absence authorized will be stated in reporting departure and in the case of an officer his address for the period of leave will also be stated. In case of leave of absence the day of departure is a day of duty and the day of return is a day of leave; in the case of furlough both dates are inclusive.

Examples: a. "Capt Barber duty to lv 10 days, No. 700 Gresham Place, Washington DC."

b. "Capt Barber lv to duty."

c. "Sgt Capps duty to fur 7 days."

d. "Sgt Capps fur to duty 9:00 PM."

12. *Absence without leave.* Departure and return in all cases of absence without leave of 24 hours or more will be stated. *An absence of less than 24 hours will not be reported on the Morning Report.* In the case of an absence without leave or in hands of civil authorities the day of departure is a day of absence and the day of return is a day of duty without regard to hours.

Examples: a. "Pvt Cromwell, SD to AWOL."

b. "Pvt Cromwell, AWOL to conf."

13. *Missing in action.* The number of officers and enlisted men by grade missing in action or captured by the enemy will be stated. *Complete information, including names of officers and enlisted men killed, wounded, or missing in action or captured by the enemy, and place of action, will be given under "Record of Events."*

Examples: a. "1 Sgt, 2 Corp, and 3 Pvts missing in action, St. Mihiel."

b. "4 Pvts captured by enemy, Meuse-Argonne."

14. *Attachment.* Attachment of officers or enlisted men for duty or for rations only, and relief therefrom, will be stated. When attached for rations only, the names of those attached will not be stated.

Examples: a. "Lt Jones attached for duty."

b. "Lt Jones, attached, reld fr duty with Co."

c. "Pvt Daniels, 15th Inf, attached for duty."

d. "10 EM attached for rations 2:00 PM."

e. "5 EM, attached for rations, left Co 10 AM."

15. *Resignation, discharge and dismissal of officers, and death, desertion, discharge or retirement of enlisted men.* Appropriate remarks will be stated in each case.

Examples: a. "Capt Smith resigned."

b. "Lt Jones honorably discharged."

c. "Lt Wilson dismissed, par — GO — WD, Jan 5/20."

d. "Pvt Dison hosp to died 2 AM."

e. "1st Sgt Morse duty to retired."

f. "Pvt Mason AWOL to desertion."

16. *Return of deserter to military control.* The return of a deserter to military control and whether he was apprehended or surrendered and place of apprehension and confinement will be stated.

Example: a. "Pvt Mason desertion to conf Post Gdhouse. Apprehended by CAuth at Newport News, Va, Jan 10/21. Retd to military control this date."

Authentication. To indicate that all pertinent data from the column for remarks on the Morning Report has been transcribed to the proper records and that the ration account has been checked, the Personnel Adjutant will prefix his initials on the Morning Report in the column for "Day of month," under the date to which the remarks pertain. Should he fail or neglect to initial the Morning Report as herein provided, his attention will be invited to the matter by the company or detachment commander.

The company or detachment commander will write his initials on the line and immediately following the last entry of the day under "Remarks." When the company or detachment commander renders Reports of Changes and prepares the Pay Rolls of his organization he will also affix his initials on the Morning Report as indicated for the Personnel Adjutant.

In all cases care will be taken to make each letter of the initials legible.

Station or location. The station or location of the company or detachment will be stated on the left edge of the page devoted to "Station and Record of events," immediately following the day of the month. If there is no change during a 10-day period, the name of the station will be stated only once. On the march, the camp or bivouac at the end of the day will be considered as the station or location of the company or detachment for the purpose of the report.

Record of events. Under this heading will be exactly noted:

a. Actions in which the organization, or any part of it, has been engaged, reconnaissances, marches, maneuvers, changes of station, with dates, places, distances marched, hour of departure and return, etc., and anything of particular interest relating to the efficiency, discipline, or service of the organization.

b. The names and grades of officers and enlisted men killed, wounded or missing in action, or captured by the enemy, with dates and places, and the nature and location of all wounds.

Additional sheets. Additional sheets will be attached for "Remarks" and for "Station and Record of Events," if the space allotted therefor proves insufficient.

Use of indelible pencil and red ink. Normally the Morning Report will be prepared with ink, but when pen and ink are not available an indelible pencil may be used for the purpose. Avoid the use of an indelible pencil if possible for the sake of neatness. Red ink *will not* be used in preparing Morning Reports except as herein prescribed and for ruling off ration periods within the month.

Computation of rations on the Morning Report. a. A ration is the allowance for the subsistence of one person for one day.

b. The money value of rations to be credited to a company depends upon the average strength of the company mess during the ration period. It is necessary therefore to keep, in the Morning Report, a careful record of the ration account for each day.

c. The daily average strength for rations is the number for whom the company is entitled to rations and is found by dividing by 3 the sum of the number of men entitled to each of the three meals, breakfast, dinner and supper with the company, as shown by the figures and "Remarks" on the Morning Report. In computing this daily average strength a fraction of $\frac{1}{3}$ will be disregarded, while a fraction of $\frac{2}{3}$ will be counted as a unit.

d. Care should be taken that the following points are observed when making computation of the daily average strength:

1. That a soldier sick in hospital at the station of his company is attached to the hospital for rations; whereas one sick in quarters is rationed with his company.

2. That a change of status of a soldier with regard to rations is assumed to have occurred after breakfast and before dinner unless otherwise stated in "Remarks."

3. That a soldier in confinement messing with his company is so accounted for.

e. The "Daily average strength for rations" as determined by the above from the tabulation and remarks on the Morning Report will be entered day by day in the column "Daily average strength for rations" of the ration account in front of the Morning Report. The names of men authorized to mess separately, the period so messed, and the number of rations involved, will be entered separately as soon as known under the heading "Men authorized to mess separately." At the end of the ration period this latter tabulation will give the amount of commutation to be delivered to the organization for payment of the men messing separately. The "Daily average strength for rations" diminished by the number of men authorized to mess separately will give the entry for the column headed "Number of men messing with the organization." This latter figure is the basis upon which the plus or minus percentage correction is made. Having made the above correction, the result is the "Net number rations due organization" which is entered daily under the column so headed. The total of these figures for the ration period will be entered on the ration return.

Filing of Morning Reports. The current Morning Report will be kept in front of the "Reminder" in the miscellaneous tray of the Company Field Desk. At the end of the month the closed Morning Report with the closed Duty Roster will be placed in front of the month card of the month just ended, where it will be kept for one year, or until this month card reappears in front of the month cards in the "Reminder," when it will then be placed in the front of the guide card "Returns" in the permanent file.

SECOND LESSON.

THE SICK REPORT.

Company Sick Report, Form No. 339 AGO. The Company Sick Report consists of two parts, viz.: The Company Officers Report and The Medical Officers Report.

The Company Officers Report. When an enlisted man is in need of medical attention, his name with Army Serial Number will be placed upon the Company Sick Report preliminary to his attendance at sick call. Sick Call is usually held at a certain hour each day but, in an emergency or when a soldier is in need of immediate

medical attention, his name will be placed on the report which will be sent to the hospital, infirmary, dispensary, or other place of holding sick call, as soon as practicable. The Company Officers Report will be prepared in the Company and will be signed by a commissioned officer of the company. Whenever practicable it should be signed and completed before the Sick Report is sent to the medical officer. The signature and rank of the company officer and medical officer will be made on the line immediately following the last entry for that day. The Sick Report will be sent to the place of holding sick call by the non-commissioned officer in charge of quarters and returned to the company by the same means.

Each day's entry to be complete. Each day's entry on the Sick Report is a complete record in itself, *i. e.*, a soldier's name appears on the Sick Report on the first day of the month and is marked hospital (Hosp) or quarters (Qrs); his name would be entered on the report for the second and succeeding days until his case has been finally disposed of by being marked "Duty," "Died," etc.

The Medical Officer's Report. This part of the Sick Report will be filled in and signed at the hospital, infirmary, dispensary or other place of holding sick call.

Change in status of those whose names appear on the Sick Report. The Company Sick Report, when signed by the medical officer, will be returned to the company without delay in order that the company commander may make disposition of the enlisted men whose names appear thereon in accordance with the medical officers report. No change of status occurs when an enlisted man's name is entered on the Sick Report and he is marked "Duty" by the medical officer unless he had been previously marked "Hosp" or "Qrs."

Line of duty. Every disease or injury suffered by an officer or enlisted man while in the military service of the United States should be reported as originating in the line of duty unless the reporting officer knows personally or by creditable information, (1) that the disease or injury existed before the man entered the service; (2) that it was incurred while the man was absent without leave; or, (3) that it resulted from wilful neglect or immoral conduct of the man himself. If the company officer cannot state definitely whether the alleged sickness or injury originated in the line of duty, he will place an interrogation point (?) in the column provided for such expression of opinion.

General Orders No. 31, W. D., 1912. When a soldier is unable to perform duty, sick in quarters or in hospital, for more than one day as a result of his intemperate use of drugs or alcoholic liquors or other misconduct he forfeits pay for the period he is unable to perform duty and is required to make good the time lost before he is discharged. When the company commander or the medical officer is of the opinion that the sickness of the soldier results from his own intemperate use of drugs or alcoholic liquor or other misconduct and an absence from duty is involved which results in penalty, the notation "No; GO 31, 1912," will be made in the columns "In line of duty." If sickness is under General Order No. 31, the Sick Report will be sent to the Commanding Officer for his "Approval," and to the Personnel Adjutant for notation that he has made an entry of the stoppage to be made. Generally, the Sick Report will be submitted to the commanding officer for his action when the soldier is returned to duty, but it may be submitted for such action at an earlier date when necessary or desirable to determine the pay status of the soldier or when the soldier is to be transferred to a hospital at another station. When the opinions of the company commander and the medical officer are in accord, the finding, if approved by the commanding officer will be final. If the commanding officer does not concur in the finding of the company commander and medical officer, or in case the company commander and the medical officer are not in accord, a board of officers will be convened for final action thereon. When an entry of "No, GO 31, 1912" is made on the Company Sick Report, the officer or enlisted man in whose case the notation is made will be informed of the entry by the company commander without unnecessary delay, and such officer or enlisted man so informed will thereupon be afforded an opportunity to appear before the commanding officer and present his objections to such entry and to produce and offer any evidence or

facts which he desires to be considered in connection therewith. An enlisted man in whose case there is pending a question as to whether sickness was the result of his own intemperate use of drugs or alcoholic liquors or other misconduct will not be paid for any period during which such question is pending and during which he is not able to do duty by reason thereof. When a soldier is on the guardhouse Sick Report the officer of the day will perform the same functions relating thereto as required of the company commander, and will notify the soldier's company commander of the soldier's exact status.

Erasures. Erasures on the Company Sick Report are prohibited. A light line drawn across an erroneous entry will sufficiently indicate its elimination. All eliminations and corrections will be authenticated by certificate of the officer making them, written on the margin of the paper.

Filing. The current Sick Report will be filed in front of the "Reminder" in the miscellaneous tray of the Company Field Desk. A Sick Report book will be completely used before a new one is started. When completely used, a Sick Report book will be placed in front of the month card for the current month, where it will be kept for one year, or until this month card reappears in front of the month cards in the "Reminder." The Sick Report will then be removed and placed in the first year of the five year file.

THE DUTY ROSTER.

The duty roster, Form No. 342, AGO. A duty roster is a list of officers or men for duty, with a record of the duty performed by or the status of each. Generally details for duty are so made that the one longest off duty is the first for detail. Details so made are said to be made by roster (Par 33, AR). In companies the duty roster is kept on Form No. 342, AGO. The terms of "Duty Roster" and "Roster of Troops" are used to designate different rosters and must not be confused.

b. Company commanders will supervise the keeping of the duty rosters. All duties performed by roster must be duly credited.

c. The duty roster consists of two parts: (1) Roster for guard duty; (2) roster for other duties.

Roster for guard duty. a. On the roster for guard duty each soldier will be charged with the number of days he has been present and available for guard duty since his last tour, with the exception of that when not available on account of absence without leave, in arrest, in confinement or on pass, he will be charged the same as if he had been present and available, the numerals being inserted in the square just above the letter indicating his status.

b. A soldier on furlough, detached service, extra duty, special duty, missing in action, or present or absent sick, will not be charged for days off duty while not available, and upon returning to duty will resume the status on the roster he had when he became non-available.

c. The soldier longest off duty, as indicated by the numeral in the date column will ordinarily be the first for detail for guard.

d. If the soldier is available but not required for guard duty, the numeral showing the number of days since he performed guard duty will be placed in the proper place opposite his name. The performance of a tour of main guard duty is indicated thus: ///. Any special guard duty, such as stable guard, may be similarly indicated, with the addition of the initial letter in the open space, thus: S///.

e. The detail for supernumerary should fall generally to the man next for detail.

Roster for other duties. a. At the beginning of the month, in the proper column opposite each man's name, will be inserted the date when he last performed the duty specified, using the abbreviated name of the month and the numeral.

b. The soldier longest off duty as indicated by the date when last performed, or absence of date, will ordinarily be the first for detail for the duty. When a detail for any one of the these duties has been determined upon, a horizontal line will be drawn through the date indicating when the duty was last performed and the

numeral inserted indicating the day of the month on which the duty is performed. If again detailed for this duty during the month, a horizontal line will be drawn through this last date and the numeral indicating the new date recorded.

c. The necessary entries relative to any regular duty by roster not provided for on the form will be shown in one of the blank columns provided for that purpose, the nature of the duty being shown in the heading of the column.

d. In case of a detail for detached service by roster, a dash will follow the numeral to indicate the date of departure. But since detached service is a variable duty as regards length of time, it is the day of return that determines "when last performed"; upon return from such detached service a horizontal line will be drawn through date of departure, and the date of return will be inserted after the dash. This does not apply to detached service other than by roster.

Preparation and amendment of roster. a. Names will be entered on the duty roster in the order in which the service records are filed. At the end of the month the dates when duties were last performed will be transferred to the proper spaces on the roster for the ensuing month, the roster being newly arranged to include changes during the past month.

b. All gains during the month will be taken up at the foot of the roster following the last name recorded, indicating the date effective by appropriate entry in the date column. All losses will be recorded by entering the word "discharged," "died," "transferred," "deserted," etc., the entry beginning in the date column on which effective.

c. The following abbreviations are prescribed for duty rosters only:

A—Absent with leave.

AC—Absent in confinement.

AS—Absent sick.

Ar—Arrest in quarters.

C—Confinement.

Csk—In confinement sick.

DS—On detached service.

ED—Extra duty.

F—On furlough.

P—On pass.

Rct—Recruit.

SD—On special duty.

Sk—Sick.

Exceptions. Departures from these instructions may be authorized by the commanding officer when a strict application would allow an improper advantage or work a hardship.

Filing. The current duty roster will be filed in front of the "Reminder" in the tray of the field desk. At the end of the month the closed roster will be filed with the month card to which it pertains until the card next appears when the duty roster may be destroyed.

COMPANY COUNCIL BOOK.

Contents. The Company Council Book will contain a record of:

a. Receipts and expenditures on account of the Company Fund.

b. Property purchased from the fund.

c. Monthly proceedings of Company Council of Administration.

d. Inspection of account by battalion, regimental or post commander required by Army Regulations.

The Company Fund. The Company Fund which consists of the gross amounts of money received from all sources, is received by the company commander and, with the concurrence of the Company Council, is disbursed by him solely for the benefit and general comfort of the enlisted men thereof. The Company Fund is not intended for expenditure in the purchase of articles to facilitate the transaction of business in a company. On the contrary, the legitimate and proper application of

this fund is in supplementing the articles furnished by the supply departments for the purpose of increasing the comfort, pleasure, contentment and physical improvement of the enlisted personnel of the organization. To accomplish this purpose, disbursements of company funds are authorized; for all other purposes they are unauthorized. Funds accruing to an organization as savings from the ration allowance will be used solely for the purchase of food and refreshments; therefore it is necessary to keep the receipts and expenditures of "Ration Savings" separate from those of "Other Funds" in the Company Council Book.

Instructions for keeping and administering the Company Fund. a. All expenditures from the company fund for food supplies of the authorized list of articles will be made through the quartermaster in accordance with the provisions of Army Regulations, except when he is not able to supply them for immediate necessity, in which case they may be secured as provided for in Army Regulations.

b. An entry will be made for each receipt or expenditure. Entries will be numbered serially beginning with No. 1 for the first entry for the month. Entries will be made in the account for the month in which money is paid or received, regardless of the month or date when the expense was incurred or the amount accrued. Entries will show date of receipt or payment; from whom received or to whom paid; for what purpose and for what period (in case of Post Exchange dividends, etc.).

c. There must be a voucher for all funds received and for all funds expended. In case of receipts the voucher will be from the person or organization paying the same. For example, when the company pool collections are turned over to the company commander the supply sergeant or other non-commissioned officer who turns over the funds to the company commander should sign a statement to that effect. This statement should show date, to whom turned over, amount, and how funds accrued. In the case of expenditures the voucher will be from the person or organization receiving the money and will ordinarily consist of a receipt accomplished on the statement of the account. Care should be exercised that the receipt definitely states the amount paid. *All vouchers for expenditures should be supported by itemized delivery slips or by an itemized statement of account.* When an itemized statement cannot be secured or the statement is not supported by itemized delivery slips it is the duty of the company commander to certify to the receipt or expenditure, noting the circumstances. This certificate is then used as a voucher.

Inspections. At least once each quarter, upon transfer of funds and whenever necessary, the fund account will be inspected by the battalion, regimental or post commander. To facilitate inspection, vouchers for the current month will be folded to fit an official envelope (being pasted on proper size paper if necessary), and briefed at the top of the outer fold:

No. 6
July 10, 1920
\$50.00

Funds deposited in bank. When placed in bank a Company Fund will be deposited in the name of the company, for instance, "Company Fund, Company A, 65th Infantry," and checks drawn against the fund will be signed, for instance, "Company Fund Company A, 65th Infantry; Marion L. Jones, Capt. 65th Inf. Custodian."

Property purchased. Under heading of "Property purchased from —," in the front of the Council Book will be listed property of permanent nature such as tools, athletic equipment, etc., purchased from the company fund.

Company Council of Administration. A meeting of the company council of administration will be held at the end of the month and whenever the fund is to be transferred, all officers on duty with the company attending, for the purpose of auditing the account, verifying the cash and bank balances and completing the account. A bank statement will be secured at the end of each month and checked against balances in council book and check book. The latter will show on the stub the balance on hand after each check is drawn. The record of the Company Council of Administration will be made monthly even though there be but one officer present

for duty with the company, in which event he will make notation to that effect over his signature.

Filing. The Company Council Book, with current vouchers, is filed in rear of the Correspondence Book and Document File in the miscellaneous tray. When filled and all monthly accounts recorded therein have been inspected by the battalion, regimental or post commander and an inspector general, the balances will be transferred to the new Company Council Book and the completed book will be filed in the five year file.

COMPANY ORDERS.

Contents. Company orders publish the appointment and reduction of 1st Sergeants, the appointment and relief from specialist ratings, details on and relief from special duty, and all administrative matters containing information or direction of sufficient importance to be published in orders.

For detached companies. Company orders will be used to publish appointments or reductions when a company, absent from regimental and battalion headquarters, has vacancies in its non-commissioned personnel, in which case the company commander may make temporary appointments subject to subsequent approval of higher authority.

SERVICE RECORD.

Opening of Service Record. The Service Record, Form No. 29, AGO, will be opened by the officer who completes the enlistment paper. This officer will fill in the "Name," "Army serial number," "Company and regiment, arms or corps for which enlisted," "Descriptive list," "Prior service," "Educational qualifications," "Occupational qualifications," "Allotments and insurance," and "Current enlistment," down to but not including the line "Assigned to ____." Other data required by the printed headings or these instructions will be added from time to time as occasion arises, care being taken to make record complete and up to date at all times.

Forwarding to first station. When recruits are sent from a recruiting depot, depot brigade, or other mobilization point, to a post, camp or regiment for assignment to an organization, the first indorsement on the Service Record will be filled out by the commanders of the recruit companies or by the personnel adjutant or recruiting officer if the recruits have not been assigned or attached to a recruiting or training company. The Service Records will be turned over to the officer or non-commissioned officer or other enlisted men, in command of the detachment. In case of a recruit travelling alone the Service Record will be forwarded by mail, or when the mail service cannot be depended upon, the Service Record will be placed in a sealed envelope with the Pay Card and any other essential papers and given to the soldier.

Transmission to company. a. Upon receipt of the Service Record at a post, camp or regiment, the personnel adjutant will complete the notation of assignment under the heading "current enlistment" and transmit the Service Record without indorsement to the company or detachment commander to which the men are assigned.

b. The company commander will note under "Remarks," page 10, the date the soldier joins the company.

Soldiers transferred or detached. When a soldier is transferred or detached from his company, the company commander will fill out the next blank indorsement on the Service Record and transmit the record with the Individual Equipment Record to the new company or detachment commander in the manner described above. Subsequent indorsements will be filled out as the changes of station or status of the soldier require, the original Service Record thus following the soldier until he is separated from active service. Before forwarding the Service Record the company commander will prepare an extract thereof on Form 29a, AGO, for file with the records of the organization.

Data to be included in indorsements. Each indorsement will give the reason for the soldier's change of station or status, and his character, and will contain a full

statement of his accounts at the time, exclusive of allotments and insurance. Under the heading "Due United States" will be noted all authorized stoppages for loss of or damage to Government property or supplies; amounts due on account of partial payments, overpayments, post exchanges, post laundry, tailor, company fund, transportation or subsistence, and stoppages, including detained pay, under sentence of court martial and on account of absence without leave, absence from duty because of disease resulting from the soldier's own intemperate use of drugs or alcoholic liquor or other misconduct, etc.; in short, all information required to be entered on the Pay Rolls except allotments and insurance will be incorporated in the indorsement on the service record. The wording of the indorsement under "Due United States" will conform to model remarks for such rolls prescribed by the War Department. The indorsement will show, in the handwriting of the officer signing it, whether the soldier "has" or "has not" an allotment running.

Disposition of Service Record of a soldier discharged, etc. When a soldier is separated from active service, his Service Record will be disposed of as follows:

a. In case of discharge, death, desertion, or retirement it will be forwarded through the Personnel Adjutant to The Adjutant General of the Army by final indorsement.

b. In case of sentence to dishonorable discharge the execution of which is suspended, forwarded by indorsement to the officer charged with keeping the records of general prisoners at the place where the man is to be confined.

c. In any case mentioned above under (a) or (b) the Service Record will be accompanied by the Pay Card of the soldier, and, in the case of a retired soldier a "Record of payment of retired enlisted man" will also be forwarded with the Service Record.

d. Where there is constructive delivery of the discharge certificate notation thereof will be made on the Service Record under "Remarks."

e. If a soldier is detached from his company at the time he is separated from active service, an Extract from Service Record will be prepared and forwarded to his company commander.

Temporary Service Record. When an enlisted man is transferred, assigned or attached to a company or detachment, and is again transferred or detached before the Service Record has been received from his previous company or detachment commander, a temporary service record will be prepared from the available data and forwarded to the new company or detachment commander for use until the original or a new record is received, when the temporary service record will be checked with the original or new service record and additional data on the temporary service record transcribed to the original, after which the temporary service record will be filed in the five year file. Temporary service records will be marked "Temporary" on the cover by the officer starting them.

Procedure in case of lost service record. In the event that a service record is lost, immediate effort will be made to trace it through the commanding officer of the company or detachment with which the man last served. If not found within a reasonable time, a report of the fact will be made to The Adjutant General of the Army by letter, who will start a new service record, and transmit it to the recruiting depot, depot brigade or other mobilization point at which the soldier was enlisted or to which he was sent upon induction into the service. The new record will then be forwarded in turn to the commanding officers of the companies with which the soldier has served during his current enlistment, each commanding officer repeating the indorsement required and making appropriate entries in the body of the record. Pending receipt of the new service record the soldier's pay and duty status will be determined from the data shown on his pay card, the last pay roll on which his name appears and from other records of the company or detachment with which he last served.

Changes in entries. Erasures of entries on Service Records are prohibited. All elimination of original entries will be made by drawing lines through the entries. Each change will be duly authenticated by the initials of the officer making it.

Additional space for entries. In case the space under any heading except deposits, allotments and insurance, in the body of the record proves insufficient, the entry will be continued under remarks. If this space proves insufficient, additional sheets for remarks may be pasted to the top of page 10. If the space for allotments and insurance is insufficient, opposite space under deposits will be taken. If the space for deposits is insufficient, additional sheets will be securely pasted at the top of the page as indicated by footnote in Service Record. If the space for showing change of station or status in an indorsement is insufficient, the entry will be continued under the heading "Due United States." One indorsement may, if necessary, occupy the space allotted to two. If there be more than 12 indorsements, an additional sheet will be securely pasted at the top of page 17, as indicated by footnote thereon. Under no circumstances will sheets or slips of paper be pasted or attached to a Service Record except as provided in these regulations.

Initiating entries. Each entry under "Military Record" on pages 5, 6, 8 and 9, will be initialed by the recruiting officer, personnel adjutant or company or detachment commander, as the case may be. The entries under "Military record" on page 7, will not be initialed. Where there are no data of record relating to the printed heading, the space under that heading will be left blank. Negative entries such as "None," "Nothing," etc., will not be made in any part of the form except as required for street and house number and indorsement.

Decorations, service medals and citations. The award of decorations, service medals, citations and foreign decorations will be recorded on page 6.

a. In the case of service medals the character, authority and serial number will be noted.

b. In the case of citations and decorations the character and authority will be noted.

Allotments and insurance. In case of change or discontinuance of any allotment notation thereof will be made following the allotment.

Filing. a. Service records are filed in the service record tray of the company field desk in the order in which the names of the soldiers appear on the duty rosters, pay rolls and monthly roster of troops. The guide card, "Non-commissioned officers" is placed in rear of the service records of the sergeants and corporals, and the guide card "Privates, 1st class" in rear of the service records of privates, 1st class, and of "Privates" in rear of the service records of privates, regardless of specialist ratings.

b. When a soldier is temporarily absent from his company or detachment on account of sickness, confinement, or detached service, and his service record has been forwarded by indorsement to his new commanding officer, the extract from the service record will be filed in the tray in place of the service record.

EXTRACT FROM SERVICE RECORD.

Function. a. The extract from the service record, Form No. 29a, AGO, replaces the service record of the soldier in the company when he is discharged, retired, transferred, dies, deserts, or is absent sick or on detached service or absent in confinement.

b. The extract will be prepared at the same time as the indorsement by which the service record is forwarded and will show the new station or status of the soldier, his character, and a complete statement of his accounts at the date, including statement as to the date to which the soldier was last paid in full.

c. When a soldier is discharged, transferred to another organization or is otherwise separated from his company while absent therefrom, the officer who is then the custodian of the soldier's service record will also furnish the company commander with an extract from the service record for file with the company records, on Form No. 29a, AGO.

When a soldier is so separated from his organization while absent therefrom, there will be entered after the words "This soldier" on Form No. 29a, AGO, the authority or reason for such separation, *e. g.*, "was transferred to Co. G, 65th Inf.,

per SO No-Hq 3rd Corps Area," or "died at Gen Hosp No 21, April 3, 1919," or "was retired per SO No 132, WD, 1919.

Filing. a. When the soldier is separated from the company by reason of discharge, retirement, death or desertion, the extract is filed in rear of the service records of privates in the tray of the company field desk until the company roster of troops for the month in which the separation occurred is received from the personnel adjutant; or if the company prepares its own roster of troops, it will be so filed until the roster is prepared for the month in which the separation occurs. If there is more than one separation, described above, from the company during the month, the extracts will be filed in the same order as the service records were filed in the tray. When the company roster of troops for the month in which the separation occurred has been received from the personnel adjutant, or when the new roster has been prepared, the extracts will be transferred to the alphabetical section of the permanent file and will be permanently preserved.

b. If the soldier is absent from the company by reason of sickness, detached service or confinement, and his service record has been forwarded to his new commanding officer, the extract from his service record will be filed in the place from which his service record has been removed. When the soldier rejoins the company and his service record is returned, the extract should be checked with the service record and may then be destroyed after additional data thereon has been recorded on the service record.

THIRD LESSON.

INDIVIDUAL EQUIPMENT RECORD.

All property of any class issued to an enlisted man for his individual use, expendable articles excepted, will be entered on his Individual Equipment Record (Form No. 637 AGO) under proper headings.

Entries for property issued. Property issued to a soldier, expendable property excepted, will be entered in one of the columns of the Individual Equipment Record under the heading "Issued," and the date of the issue will be indicated by figures on the date line in the proper columns thus, "7/2/20." The issue will be attested by the initials of the witnessing officer. The receipt of the property by the soldier will be acknowledged in all cases by his initials at the foot of the column—for clothing on the line immediately above the line "Officers initials," and for equipment on the line "Soldier's initials." The witnessing officer will draw a line through each blank space in the column under the particular class of property which is involved. If two or more blank spaces appear together, a continuous vertical line will be used but if only one blank space is to be cancelled a horizontal line will be used instead of the vertical line. *It is neither necessary nor desirable to have a balance column after each issue.* When clothing is first issued to the soldier the sizes that have been determined to be the proper ones will be entered in the column headed "Sizes."

Entries for property turned in. When property is turned in or otherwise accounted for, the items will be dropped from the Individual Equipment Record the action being supported by Receiving Reports, Shipping Tickets, Reports of Survey, I & I Reports, or Statement of Charges as vouchers. The items will be entered in the column under the heading "Turned in" the column being completed and initialed by the officer who received the articles turned in or who enters on Statement of Charges the articles lost, damaged or destroyed. No record will be made on the Individual Equipment Record for property worn out by fair wear and tear in service and which is turned in and replaced by identical property in serviceable condition.

Transferring to new record. When a soldier's Individual Equipment Record is filled the account will be transferred to a new form by striking a balance between the total issued and total turned in of all articles shown on the old form, and the "Issued" and "Turned in" columns thus balanced will be marked "Cancelled," the balance carried forward to the first "Issued" column of the new form and com-

pleted and initialed as described above by the witnessing officer and the soldier. The old form thus cancelled will then be filed with the new form until the next inspection by an auditor, after which the cancelled record and any vouchers pertaining to it may be destroyed.

Action to be taken when soldier is separated from his company. Transferred or detached. When a soldier is transferred or detached from his company the articles which he is to carry with him will be entered in the first unused "Issued" column, which will bear the date of his change of status. Other articles for which he is responsible will be entered in the first unused "Turned in" column upon being turned in. This column will also bear the date of his change of status. Both "Issued" and "Turned in" columns will be initialed by the witnessing officer. The column showing the articles which the soldier is to take with him will be initialed by the soldier. When a soldier is unable to account for articles of clothing or equipment issued to him and these articles have not been covered by Statement of Charges and Charged against him they will be included in the articles entered against him in the first "Issued" column of the Equipment Record. All other columns will be cancelled with red ink by writing "Cancelled" the full length of the column. The Equipment Record will then be forwarded with the Service Record to the soldier's new commanding officer. When a soldier enters a hospital, entry will be made in pencil in a vacant "Turned in" column of his Individual Equipment Record of the property collected and turned in to the Supply Sergeant. Upon his return from the hospital, the articles will be returned to him and the pencil notation erased from the record.

Desertion. When a soldier is dropped as a deserter, all articles of property for which he was responsible and which were turned in at the time the soldier absented himself will be credited upon his Individual Equipment Record. Any shortage in or damage to property for which he was responsible, as determined by Survey, will be charged against him on a Statement of Charges, which will be sent to the Personnel Adjutant and, upon its return, the articles thus accounted for will be dropped in the final "Turned in" column of the record. This column will bear the date of the action and will be initialed by the officer, who will cancel all other items. The total amount charged will be entered upon the retained Extract from Service Record. All articles of clothing left by a deserter will be turned in to the Salvage Officer. The Individual Equipment Record will be placed in the one year file and at the end of one year will be destroyed. The Vouchers to the record may be destroyed following the visit of an auditor.

Discharge or retirement. Upon the discharge or retirement of an enlisted man his Individual Equipment Record will be closed out as provided for in the case of transfer. Missing articles will be accounted for by Statement of Charges or by approved Report of Survey. The Individual Equipment Record will be placed in the one year file and at the end of one year will be destroyed.

Death. When a soldier dies new clothing will be issued for burial. Articles so drawn will be entered in the next blank "Issued" column and the individual clothing slip will contain the word "Deceased." They will be listed as "Turned in" in a column marked "For Burial." The articles of clothing which are missing will be noted in another column marked "Missing." The value of the clothing unaccounted for after the death of the soldier will not be charged against him on Final Statements in the absence of positive evidence of carelessness. All other public property charged under "Issued" will be entered in the next blank "Turned in" column if available for turning in. All missing articles for which the deceased was responsible, other than clothing as noted above, will be listed on the Statement of Charges for stoppage against his accrued pay. The total charge will be noted on the Extract from Service Record and the items charged will be dropped from the Individual Equipment Record. All used columns other than those showing clothing used for burial, missing clothing and the final "Turned in" column will be cancelled. Each of these newly used columns will be dated and initialed by the company commander. The Individual Equipment Record thus closed will be placed in the one year file and at the end of one year will be destroyed.

Discharge other than honorable. When a soldier is discharged otherwise than honorably, all uniform outer clothing in his possession will be retained for military use. Ordinarily civilian outer clothing will be issued to him in its stead by the quartermaster. With this exception his individual equipment record will be closed in the same manner as in the case of a soldier honorably discharged.

Filing. The Individual Equipment Records will be filed in alphabetical order by grades, as in the case of service records, in the loose leaf binder provided. The file will be kept in the upper right section of the top of the field desk.

REPORT OF CHANGE.

Reports of changes will be rendered by the personnel officer at each headquarters to which company or detachment morning reports are submitted, or for which headquarters morning reports are prepared. In case of a detached company or detachment serving alone the commander thereof will himself render reports of changes, or will designate a subordinate officer for this duty. It will be the duty of all commanding officers to see that reports of changes are rendered as required by regulations.

Preparation and rendering of Report of Change. A separate report for each officer and enlisted man will be rendered for each day on which a change occurs. Normally the report will be prepared on a typewriting machine using a record ribbon of standard quality. When impracticable to prepare the report on a typewriting machine ink or an indelible pencil may be used for the purpose. Copies may be made by carbon process, but in every case the original will be forwarded to The Adjutant General of the Army.

Remarks entered on Report. The remarks on the Report of Changes will be identical with those on the Morning Report, except as hereinafter indicated.

The following changes in duty and status of officers, warrant officers, and enlisted men *will not* be reported to The Adjutant General of the Army on Report of Change:

- a. Extra and special duty and return to duty therefrom.
- b. Sickness not involving a change in station or a change of status from present to absent, or the reverse, on the morning report.
- c. Arrest and confinement and return to duty therefrom.
- d. Sentences of courts-martial.

MONTHLY ROSTER OF TROOPS.

The Monthly Roster of Troops of a company (Form No. 703 AGO) is prepared by the Personnel Adjutant unless it pertains to a separate or detached company or a detachment serving alone when it will be prepared by the company or detachment commander or an officer designated to render the Reports of Changes for the company or detachment.

Preparation of rosters. A roster containing names of officers and enlisted men is required for each company, detachment, etc., for which a Morning Report is submitted. Monthly Rosters will contain the following information:

- a. The names of all officers and enlisted men who belong to or are attached to a command at midnight on the last day of the month, and of those who have been separated therefrom during the month. These names will be shown on the roster from the date of receipt of assignment, whether or not they have yet joined, and will be entered in the following order: (1) Commissioned officers belonging to the organization in order of rank; (2) attached officers in order of rank; (3) non-commissioned officers in order of grades given in General Orders No. 36, War Department, 1920, the names under each grade heading appearing in the order of the dates of warrants; (4) privates, first class, in alphabetical order; (5) privates in alphabetical order; (6) enlisted men attached for duty in the order given above for enlisted members of the company.

b. The names of officers and enlisted men who have ceased to belong to the command during the month will be entered after the names of enlisted men attached for duty under the heading "Losses during the month." The names will be entered in the order prescribed above for members of the company.

c. In all cases the last name will be written first, *e. g.*, "Smith, John A." and not "John A. Smith."

d. The Army Serial Number of each enlisted man will be entered immediately after his name.

e. All absences of officers and enlisted men at the end of the month will be noted with statement showing cause of absence, date of departure, and in case of detached service, sickness, and confinement, the place of absence.

f. The date any officer or enlisted man joins the company will be stated after his name.

g. The date any officer or enlisted man rejoins the company from an absence previously reported on Monthly Rosters will be stated after his name.

h. The cause of separation and the date thereof will be stated in the case of all officers and enlisted men who have ceased to belong to the company during the month.

i. The names of casualties *will not* be shown on these rosters.

j. No notation will be made in case of an absence that *began and terminated* in the same month.

Disposition of Rosters. Two copies of Monthly Roster of Troops will be prepared. The original copy will be forwarded to The Adjutant General of the Army and the retained copy, when prepared by the Personnel Adjutant, will be retained by him for use at the headquarters of the command or station for a period of one month, or until the roster for the succeeding month is prepared, when it will be transmitted to the company for file. When received in the company it will be filed with the closed Morning Report for the same month in front of the month card for the month to which the Roster and Morning Report pertain, where it will be kept for one year or until this month card again appears in front of the month cards in the reminder when it will be removed and placed in the returns section of the permanent file.

COMPANY STRENGTH RETURNS.

Company Strength Returns (Form No. 30, AGO) are prepared by all separate or detached companies or detachments of all branches, and by all units, establishments and institutions similar in organization and administration to a separate company. They *are not* prepared by companies serving at the headquarters of the regiment, separate battalion, or similar unit to which they belong. The data concerning such a company necessary to prepare the Regimental Strength Return (Form No. 41, AGO) is obtained from Headquarters Company and Company Morning Reports.

Instructions for preparation of Strength Return. The word "Branch" as used in connection with Strength Returns will be understood to mean those arms, staff corps and departments prescribed by law for the Regular Army and which are to be accounted for separately. The branches are Infantry, Cavalry, Field Artillery, Coast Artillery Corps, Air Service, Corps of Engineers, Signal Corps, General Staff Corps, Adjutant General's Department, Inspector General's Department, Judge Advocate General's Department, Quartermaster Corps, Finance Department, Medical Department, Ordnance Department, Chemical Warfare Service, Chaplains, Detached List (detached officers and detached enlisted men), Retired List (officers, warrant officers and enlisted men), Philippine Scouts, and Warrant Officers.

Predominant race will be indicated on Form No. 30 and Form No. 41 by a cross (X) in the appropriate space in the upper left-hand corner of the first page. For troops other than white or colored, race will be shown by abbreviation, such as "Phil" "Haw," etc., in the space provided for such notation.

Branch will be shown in the upper right-hand corner as "Infantry," "Cavalry," "Medical Department," etc. *Only one branch will be included in a single return.* Form No. 42, AGO (Return of Attached and Casuals of Another Branch), will be used in connection with Form No. 41, or Form No. 30, for returns of attached and casuals of another branch with a regiment, separate or detached battalion or company, or similar units.

In the columns "Subdivisions of Branch" on Form No. 30 and Form No. 42, AGO, the subdivisions of the branch, or services within the branch, will be shown, each on a separate line. For example, in the Medical Department Branch, the Medical Corps, Dental Corps, Veterinary Corps, Medical Administrative Corps, Enlisted Men, Army Nurse Corps, and Contract Surgeons will be shown on separate lines. Likewise in the Quartermaster Corps branch the Supply Service, Construction Service, Transportation Service, and Remount Service will be shown on separate lines. If the branch is not composed of different sub-divisions or services, the lines in this column will not be filled in.

A separate strength return, or return of attached and casuals of another branch according to circumstances will be rendered for each branch except that no separate strength return or return of attached and casuals of another branch will be prepared for a branch composed of officers only, such as General Staff Corps, Adjutant General's Department, Inspector General's Department, Judge Advocate General's Department, and Chaplains, nor for Warrant Officers, but all branches will be accounted for on the back of the regimental, company or headquarters strength return under "Totals (F. H. and K.) from other branches."

In order to describe definitely their status with relation to the organization or headquarters for which returns are rendered, and to connect strength returns and returns of attached and casuals of another branch with morning reports, personnel with the organization or headquarters will be classified as follows: A, belonging to the organization; B, attached of the same branch, belonging to another organization; C, attached of the same branch, unassigned to any organization; D, casuals of the same branch, belonging to another organization; E, casuals of the same branch, unassigned to any organization; F, attached by Tables of Organization from another branch; G, attached of another branch, belonging to an organization; H, attached of another branch unassigned to any organization; I, casuals of another branch, belonging to an organization; and K, casuals of another branch unassigned to any organization.

Officers and enlisted men who join an organization or headquarters by assignment, transfer, or attachment, or as casuals, and are separated therefrom by transfer, by relief from attachment, or by departure in case of casuals, *before the end of the month*, will *not* be shown under gains or losses in the table of Alterations since last Monthly Return. In all other cases gains and losses will be shown in the appropriate columns, however short a time the officers or enlisted men have served with or been carried on the rolls of the organization.

Strength Returns on Form No. 30 and Form No. 41, will be accompanied by Record of Events, Form No. 43, and as many returns of attached and casuals of other branches, Form No. 42, as may be necessary to account for personnel of all branches attached to or casually with the organization or detachment.

Disposition of copies of Strength Returns. The original and copies of strength returns and returns of attached and casuals of another branch will be disposed of as indicated below.

a. In all cases except detached battalions and companies the original will be sent directly to The Adjutant General of the Army.

b. In cases of detached battalions and companies the original will be sent directly to the regimental, separate battalion, or similar unit commander, unless the detached battalion or company is at the time in a different department or corps area from that of the regiment, separate battalion or similar unit, in which case the original will be sent directly to The Adjutant General of the Army, as required for strength returns of a regiment. When a detached battalion or company renders a strength

return directly to The Adjutant General of the Army the words "Less Battalion," or "Less Company" will follow the designation of the regiment, separate battalion, or other similar unit in the caption of the strength return, Form No. 41, AGO, and the strength of the detached battalion or company will not be included in the return of the regiment or separate battalion in this case.

c. A copy will be retained with the records of the organization.

d. A copy will be furnished to the next higher administrative commander when the station of the headquarters of such commander is different from that of the organization rendering the return. When stations are the same, the copy to be retained by the organization will be sent to the headquarters of the higher administrative commander for use in preparation of post or camp return, after which it will be returned to the organization for file.

e. A copy of the strength return of each organization or detachment of a staff corps or department and a copy of the return of attached and casuals (Form No. 42) of a staff corps or department will be furnished to the chief of the staff corps or department concerned. *This copy will be forwarded through the department or corps area commander.*

f. If the organization is not a part of a regiment, separate battalion, or similar separate unit but is a part of a division or separate brigade and separated therefrom a copy will be furnished to the division or separate brigade commander.

Rendition of Monthly Strength Returns. Monthly Strength Returns should be rendered on the first day of each month. When for any reason the rendition is delayed beyond the fifth of the month, a letter of explanation will be forwarded with the original and each copy of the return, except in campaign.

Copies of Strength Returns may be made by carbon process but each must be clear and distinct, and signed.

A commanding officer who is required to render strength returns may delegate to his adjutant, if there be one, authority to authenticate the same. When authority is thus delegated, the words "For the Commanding Officer" will be prefixed to the adjutant's signature. The word "Commanding" will be stricken out and the word "Adjutant" substituted therefor.

Filing. The copy of the Company Strength Returns retained with the records of the organization will be placed in the "Reminder" in front of the month card for the month to which the return pertains, where it will be kept for one year, until this month card reappears, when the retained copy will be transferred to the returns section of the permanent file.

PAY ROLLS.

Instructions for the preparation of Pay Rolls are contained in Special Regulations No. 58. Normally the Company Pay Rolls are prepared by the Personnel Adjutant of the regiment, separate or detached battalion, or similar unit, or of the headquarters to which the Morning Report is submitted, but, in case of a separate or detached company or a detachment serving alone the Pay Rolls are prepared by the company or detachment commander or by a subordinate officer designated as Personnel Adjutant.

Procedure when company is detached. When a company is to be detached the company commander or the subordinate officer designated by him as personnel officer will obtain from the personnel adjutant of the regiment, separate battalion, or similar unit, or from the personnel adjutant of the post, camp or station in the case of separate companies and detachments, pay cards pertaining to the company, the pay roll of the company for the preceding month, and the pay roll of the current month completed to date. Upon arrival at the new station these records will be turned over to the personnel adjutant of the post, camp or station; or if the company is to serve alone, they will be retained with the company records, being filed in the lid section of the field desk.

Procedure when company rejoins regiment or station. When the company rejoins the regiment, or in the case of a separate company or detachment when it returns to

its proper station, the pay cards, retained pay rolls, pay rolls upon which payment has not yet been made, if any, and the pay rolls for the current month completed to date will be turned over to the personnel adjutant of the regiment or of the post, camp or station.

Signing and extension of pay roll. a. An original and two carbon copies of pay rolls will be prepared. The original will be transmitted to the company commander to be signed by the enlisted men borne thereon who are to receive pay. The soldier's signature is an acknowledgment of the correctness of stoppages, as well as a receipt for amounts accruing him, except when noted as in sub par. f. and he will be so advised.

b. The company commander will return the signed pay roll to the personnel adjutant who will transmit it with the first carbon copy to the disbursing officer for computation.

c. When the first carbon copy is returned to the personnel adjutant after the computation the first and second carbon copies will be transmitted to the company commander in time to enable him to extend the second carbon copy of the pay roll prior to payment. This extension includes the copying of all new items to the second carbon copy from the computed first carbon copy.

d. Both carbon copies are then returned to the personnel adjutant, who retains the second carbon copy for reference pending payment, and returns the first carbon copy to the disbursing officer.

e. Having been notified by the disbursing officer of the time of payment, the personnel adjutant sends the second carbon copy to the company in time for the payment, following which it will be returned to the personnel adjutant for file.

f. If for any reason a soldier who has signed the pay roll is not paid, a notation "Not paid" will be made opposite his signature on the original and on the two carbon copies. This will be done in case the soldier refuses payment contending the amount to be in error, or in case of transfer, discharge or death subsequent to signature and prior to payment.

Deposits. The company commander will cause those soldiers who desire to make deposits with the disbursing officer to give notice to that effect when signing the pay roll, so that the proper receipt in the soldier's deposit book may be prepared prior to payment, ready for the disbursing officer's receipt thereon after he has taken up the deposit.

Company collections. The company collection sheet is prepared before payment so that the collection for the various company activities may be made as soon as the soldiers leave the pay table. In assessing and making company collections company commanders should be guided by the precedents and rulings imposed by the Post Exchange council as to charges and percentages accruing to the company fund from company barber, tailor, cobbler, etc.

Procedure after payment. a. When the disbursing officer has completed the payment the officer witnessing the payment will accomplish on the original pay roll the certificate that he witnessed the payment as made by the disbursing officer whose name he notes on the pay roll together with date of payment; and the certificate on each carbon copy that it is a true copy of the original, excepting signatures in receipt column and the certificate as to witnessing payment.

b. If the pay roll has been prepared by the personnel adjutant, he and not the company commander, will certify to the correctness of each roll.

c. As soon as the payment is completed the company commander will attest the receipts made by the disbursing officer in the several deposit books, make the required entry of deposit on the service record, and check the soldier's name and deposit on the advice of soldier's deposit which should be prepared in advance for transmission direct to the Chief of Finance of the Army as soon as checked and signed.

d. In each case of deposit by a soldier the corresponding entries in the deposit book and service record will be compared and checked, and the entry on the service record will be initialed. A similar procedure is had when deposits are made at times other than at the regular monthly payment.

Payment by express or check. In the cases where payment is not made by a finance officer in person, the money is forwarded by express, and payment is made according to the procedure required by Army Regulations, pars. 1320-31. Where, in similar cases, payment cannot be made by express the procedure is indicated by pars. 1334-35, Army Regulations. Where payment is made by check the company commander, at the soldier's request, will certify to his indorsement to facilitate payment.

Part collection of stoppage. In case of considerable stoppage or indebtedness against a soldier's pay, and where a special hardship would be worked upon the soldier, the collection may be limited to two-thirds of his pay. In the case of a deserter restored to duty the collection of resultant stoppages and indebtedness may be limited to one-third of his pay under like circumstances. If pay is too small to meet Government insurance premiums, etc., the procedure prescribed in Special Regulations No. 72, par. 74h, will be followed.

DEPOSITS.

Soldier's Deposit Book, QMC Form No. 41. a. Any enlisted man in active service may deposit his savings with any finance officer in sums of not less than \$5.

b. The deposit book will show the name and Army serial number of the depositor, the place, date and amount of each deposit. Each deposit will be receipted by the finance officer and attested by the company commander.

c. Deposits will be noted on service records of the soldiers concerned immediately after payment and before the advice of soldier's deposits is forwarded to the Chief of Finance.

d. The transfer, pledge, or sale of the deposit book is prohibited. Enlisted men should be informed of the importance of preserving deposit books as the only certain means of insuring prompt payment of deposits upon discharge.

Advice of soldier's deposits, Form No. 8a, QMC. a. When deposits have been made by enlisted men, the company commander will forward directly to the Chief of Finance, a list of the names of the depositors showing in each case the date, place and amount of each deposit and the name of the finance officer who received it.

b. Each report will be restricted to include only deposits with *one* finance officer on a *given date*.

c. Before being forwarded to the Chief of Finance the list will be compared with the entries on the service records and deposit books, and the company commander or other officer witnessing the payment will be careful to see that the names and Army serial numbers of the depositors are correctly given.

FOURTH LESSON.

SOLDIER'S ALLOTMENT.

An enlisted man in active service or a retired enlisted man on active duty may make an allotment for his own savings or for any other purpose except to obtain an advance of pay.

Classification of allotments. Allotments are classified as follows:

Class C. Government insurance premiums under War Risk Insurance Act.

Class D. Allotments for payment of premiums on Government converted insurance.

Class E. Allotments for all other purposes.

Blank forms for preparation of allotments. Allotments of Class "C" are made, in duplicate, on special War Risk Insurance Forms.

Class "D" allotments will be made, in triplicate, and Class "E," in duplicate, on QMC Form No. 38.

Instructions for preparation of allotments. a. Before the company commander signs the allotment he will require the soldier to read the entire form and verify the name and address of the allottee.

b. Before certifying a Class "E" allotment the company commander will satisfy himself that the allotment is not made for the purpose of obtaining an advance of pay. When a bank is designated as allottee, the company commander will furnish the bank with the signature of the grantor and inform the bank of the amount and the period of the allotment. The company commander will also, if possible, satisfy himself that the bank has an existence.

c. Allotments will be noted on the Service Record of the soldier in the space provided for the purpose. The company commander will write or stamp on the duplicate the words "Entered on Service Record" and add his initials.

d. A discontinued allotment cannot be renewed but a new allotment may be made by executing a new form.

e. An allotment may not be made to an enemy alien, whether a resident of the United States or a foreign country.

f. Both copies of the allotment will be transmitted to the Personnel Adjutant, who will make the necessary entries on the Pay Card of the soldier and the Pay Rolls of the company, write or stamp on the duplicate the words "Entered on Pay Roll and Pay Card" and return them to the company commander. The original allotment will be sent directly by the company commander to the Zone Finance Officer, Washington, D. C., and the retained copy filed with the soldiers Service Record.

Discontinuance of allotment, QMC Form No. 39. a. When an allotment is to run for the full period for which granted no request for discontinuance or notice of expiration is necessary.

b. Allotments will be discontinued prior to the expiration for which granted:

(1) Upon request of the soldier.

(2) Upon request of the company commander when forfeiture of pay by sentence of court martial is such that possibly it cannot be collected in full prior to the discharge of the soldier if the allotment is continued.

(3) Upon request of the company commander because of reduction in rank, continued misconduct, stoppage of pay for loss or damage to Government property, or when for any other reason the soldier's available pay will not warrant continuance of the allotment.

(4) a. In the case of (1), (2) and (3), the request for discontinuance will be prepared on QMC Form No. 39, signed by the company commander and forwarded directly to the Zone Finance Officer, U. S. Army, Washington, D. C., and to the Bureau of War Risk Insurance in the case of Class D allotments.

b. The form will be signed by the soldier when the request is made by him as contemplated in sub par. b (1).

c. (1) A memorandum concerning the request will be placed in the "Reminder" under the date that the acknowledgment from the zone finance officer may be expected. If the proper form for requesting discontinuance of allotment is not available the allotment may be discontinued by letter, in which case a carbon copy of the letter should be placed in the "Reminder" as in the case of the memorandum when the proper form is used.

(2) The zone finance officer will notify the company commander of the fact of discontinuance of payment to the allottee and the last month for which the allotment was paid. The notification from the zone finance officer, when received by the company commander will be transmitted by him to the personnel adjutant, who, after making necessary entries on the pay roll of the company and the pay card of the soldier, will write or stamp on the notification the words "Entered on pay roll and pay card" and return the notification to the company commander who will file it as hereinafter indicated.

(3) The request for discontinuance of the allotment will specify the month for which the last payment is to be made, but the stoppage of pay to meet the allotment must be continued until the notification is received from the zone finance officer

and the soldier will then be credited on the next pay roll with any amount withheld in excess of the amount paid the allottee.

(4) When the notification from the zone finance officer, is received back from the personnel adjutant, the fact of discontinuance of the allotment will be entered on the service record of the soldier, the entry being initialed by the company commander. The notification of discontinuance will then be placed in the five year file, and the memorandum in the "Reminder" destroyed.

d. On the death, discharge, retirement or desertion of an enlisted man who has an allotment running, the allotment ceases and the company commander will report the separation from active service as follows:

(1) In every such case the company commander will prepare and forward to the Zone Finance Officer, Washington, D. C. (and to the BWRI in cases of Class D allotments) a notification of discontinuance of allotment on QMC Form No. 39.

(2) In cases occurring within the continental limits of the United States, including Alaska, after the 20th of the month of discharge, retirement or desertion, of an enlisted man having an allotment running, the company commander, in addition to giving notice on QMC Form No. 39, will also report by telegram to the zone finance officer, the fact of separation from active service, giving the full name, army serial number and company and regiment, of the soldier.

(3) a. In cases occurring without the continental limits of the United States, including Alaska, of discharge, desertion, or retirement of an enlisted man who has an allotment running, the company commander, in addition to sending notification to the zone finance officer, will report the separation from active service to the commander of the department or expeditionary forces, to be cabled to The Adjutant General of the Army. The report of the company commander will include the name, army serial number, company and regiment, arm, corps or department of the soldier and the fact that he has an allotment running. The report will be sent by telegram in case report by mail under normal conditions of mail service would not reach the headquarters of the department or forces on or before the 20th of the month in which the separation from the service occurs.

b. The fact and date of mailing the notification to the zone finance officer and of making the report to the commander of the department or expeditionary forces will be noted under "Remarks" on the extract from Service Record.

c. If an erroneous payment is made to an allottee because of the failure of an officer responsible for such report to report the death of the grantor or any other fact which renders the allotment unpayable, the amount of such erroneous payment will be charged to the officer who fails to make such report.

DISCHARGE OF ENLISTED MEN.

No enlisted man lawfully enlisted or inducted into the military service of the United States shall be discharged from said service without a certificate of discharge signed by a field officer of the regiment or other organization to which the enlisted man belongs, or by the commanding officer when no field officer is present. When more than one field officer of the regiment or corps is present, the commanding officer may designate the particular officer to perform this duty and in any case the commanding officer may require the discharge certificate to be submitted to him before delivery to the soldier. The "Certificate of Discharge" to be signed by the field officer is printed on the face of the form. The "Character" given the soldier will be entered on the face of the form in the handwriting of the company commander. Both the "Character" and the "Enlistment Record," on the back of the form, will be signed by the company commander.

Discharge Certificates. a. Discharge Certificates, Forms No. 525, 526 and 527, AGO, will be used in the discharge of enlisted men only. Discharge Certificates are of three classes, viz.:

1. The blank for honorable discharge (Form No. 525, AGO, printed on white paper) when the soldier's conduct has been such as to warrant his re-enlistment, and his service has been honest and faithful.

2. The blank for dishonorable discharge (Form No. 527, AGO, printed on yellow paper) for dishonorable discharge by sentence of a court martial or military commission.

3. The blank for discharge (Form No. 526, AGO, printed on blue paper) when the soldier is discharged except as specified under (1) and (2).

b. The preparation of discharge certificates in manuscript is prohibited when the proper printed forms therefore are available.

c. Under no circumstances will data on a discharge certificate be filled in on a typewriting machine, nor by rubber stamp. All entries must be neatly and legibly made in longhand. The certificate of discharge is the official record of service furnished the discharged man and as such must be exact, not readily changed, and presentable.

d. Discharge certificates will not be made in duplicate. Upon satisfactory proof of the loss or destruction of a discharge certificate without the fault of the person entitled to it, the War Department may issue to such person a certificate of service.

e. Discharge certificates must not be forwarded to the War Department in correspondence unless called for.

f. A certificate of discharge *will not* be given to a retired soldier.

Instructions for preparation of discharge certificates. a. The discharge of a soldier takes effect on the date of notice to him of such discharge, either actual by the delivery of the discharge certificate, or constructive where such delivery cannot be made owing to his absence for his own convenience or through his own fault, or in the case of an insane soldier, in which cases receipt at the soldier's proper station of the order directing the discharge will be deemed sufficient notice. In the latter cases the date of the receipt of the order and the reason why actual notice thereof was not given to the soldier will be indorsed under the certificate. Such notation will made on the service record under "Remarks."

b. If a soldier is detached from his company at the time he is discharged, an extract of his service record will be forwarded without delay to his company or detachment commander.

c. In cases where the soldier was retained in service to make good any time lost through desertion, unauthorized absence, confinement under sentence or while awaiting trial and disposition of his cases, if the trial results in conviction, or through inability to perform duty on account of intemperate use of drugs or other alcoholic liquor, or on account of disease or injury the result of his own misconduct, the notations will read "Retained in service . . . days after expiration of term of enlistment under A. W. 107."

d. In cases where the soldier was retained in service for the convenience of the Government the notation will read: "Retained in service . . . days after expiration of term of enlistment for convenience of the Government."

In either case the explanatory notation will be made under "Remarks."

e. When a soldier is sentenced by court martial to confinement without dishonorable discharge, and the period of confinement adjudged extends beyond the time when, either by the terms of his enlistment or by the terms of said enlistment with lost time added under the provisions of the 107th Article of War, he would be entitled to discharge, he will be held to serve out his sentence and, after his return to full duty status, will be required to make good all time lost under the 107th Article of War before being discharged.

f. Whenever an enlisted man is discharged from the army prior to the expiration of his term of service, the actual cause of discharge and the number, date and source of the order or description of authority therefor will be fully stated on the discharge certificate. (Forms 525 and 526) as the reason for discharge, *e. g.*, "Dependent mother; par. 4, SO 146, Hq 2nd Corps Area, 1920."

g. When a soldier is discharged on account of misconduct or unfitness for service, physical or in character, due to his own misconduct, the statement to that effect set forth in the order directing his discharge will be noted in the discharge certificate as the reason for discharge, *e. g.*, "Having become physically unfitted for the service due to his own misconduct ; par. 13, SO 49, Hq 2nd Corps Area, 1920."

h. When a soldier is discharged on surgeon's certificate of disability, a statement to that effect will be made on the discharge certificate as the reason for discharge, but the diagnosis as given in the certificate of disability will not be quoted, *e. g.*, "SCD, 4th Ind. Hq 2nd Corps Area, May 15, 1920."

i. When discharge is by reason of expiration of term of service, that fact will be stated, written thus, "Expiration of service."

j. When an enlisted man is discharged from the service the "character" given to him on his discharge certificate will be noted on his service record.

k. The "character" given on a discharge certificate is discretionary with the company or other immediate commander of the soldier, except where otherwise directed by sentence of a general court martial, or by orders from the War Dept.; and the defacing of a discharge certificate by writing thereon anything to the discredit of the soldier's character, after the same has been given by his company commander, is prohibited.

l. When in the opinion of the company commander the circumstances warrant it, notation will be made under remarks on the back of discharge certificate that the soldier is fitted for a commission in the United States Volunteers giving his special qualifications.

m. Immediately following the heading " Battles, engagements, skirmishes, expeditions " on the discharge certificate will be interpolated the heading " Decorations, service medals and citations." Under this heading will be recorded the award to the soldier of any decoration or citation for valor or service, and the authority for the award, if none so state.

FINAL STATEMENTS.

A Final Statement (WD Form No. 370), in duplicate, properly certified by the company commander will be given with the Discharge Certificate (Form No. 525, AGO) of every enlisted man honorably discharged from active service. Under certain circumstances as hereafter described Final Statements will also be given to enlisted men who are discharged on Discharge Certificates (Form No.'s 526 and 527, AGO).

Instructions for preparation of Final Statements. a. The Final Statement will be prepared in ink, *not on a typewriter*, and the officer signing and certifying to its correctness will be held responsible for its accuracy and proper preparation. In case of overpayments on erroneous final statements the certifying officer will be required to refund the amount involved if it cannot be collected from the soldier overpaid. This applies when overpayments are made by reason of omitting entries such as statements of unauthorized absence, etc. To prevent false preparation or changes, the blank forms will invariably be kept in the custody of the company commander, and, except in listing deposits on the outer fold, all money amounts will appear both in words and figures.

b. Before delivering final statements upon which deposits are credited, the officer signing it will ascertain whether the soldier has the deposit book; and, if so, instruct him to present it to the finance officer. Should he claim to have lost it, the officer will cause his affidavit to that effect to be taken and attached to the final statement before he leaves the company. The affidavit will state clearly the circumstances attending loss of the book and show that the soldier has not sold nor assigned it. Upon this evidence the finance officer may pay, and the responsibility for the correctness of amounts credited on the final statement will rest with the officer certifying it. Deposit books will be taken up by the finance officer who makes

final payment for file with his vouchers. The company commander will advise the soldier as to the disbursing officer to whom he is to present his final statement. If there is no disbursing officer at the soldier's station and if there is no one to whom he can transfer his final statement he will be directed to the nearest disbursing officer. In this case notification of discharge will be forwarded.

c. All data entered in the spaces provided on the Final Statement will be taken from the soldier's record as shown by his closed Service Record. Especial care must be exercised in the following particulars: (1) "Final Statement of"—In addition to the name, the soldier's Army Serial Number must be given. (2) "Reason"—In this space will be shown the reason for discharge as shown by the final indorsement on the Service Record, and as noted on the Discharge Certificate. If discharge is made on Certificate of Disability the ascertained disability, as recited in the certificate, must be given as the reason or cause of discharge. When discharge is on account of the soldier's misconduct, or unfitness for service resulting therefrom, either physical or in character, a notation to that effect will be made on the Final Statement. Officers signing Final Statements will be careful to see that proper notations are made in all cases under this heading, as the cause of the soldier's discharge determines his right to travel allowances, and the mere quotation of the number and date of the order upon which discharge is based is insufficient as a guide to proper payment. (3) "Due Soldier for"—Any amounts shown by the Service Record to be due the soldier and which are not included in the printed headings on the Final Statement, except those specified under (7) below, will be entered in this space. (4) "Additional pay"—Notation will be made of the additional pay due soldier for Certificate of Merit, marksmanship, gunner qualification or other rating. (5) "For deposits"—The total of all deposits shown on the Service Record will be shown in words and figures. The itemized list of deposits will be entered on the outer fold of the Final Statement. In case deposits are forfeited by desertion, the amounts of the same will be entered under the heading "Remarks," with the facts and authority for such forfeiture, but they will not be entered in the column headed "List of deposits" on the outer fold. If the soldier has made deposits with the company or post commander which he wishes applied to purchase of discharge, if such be authorized, the officer will immediately upon receipt of order for discharge of the man, forward the money, with the soldier's deposit book, to the finance officer for deposit and send to the Chief of Finance the usual notification of deposit. On the return of the deposit book by the finance officer the final statement may be prepared and will contain a notation of the deposit, thus showing on its face the total credit of the soldier, which must in every case be sufficient to cover all indebtedness to the United States, including the cost of purchase of discharge. The deposit book must accompany the final statement in every case. (6) "For pay detained by court martial"—The total amount of all pay detained by court martial will be entered. (7) "For"—The Final Statement of an enlisted man who is entitled to commutation quarters, heat and light will show the inclusive dates for which such allowances are due and the soldier will execute War Department Form No. 369, insofar as it pertains to these allowances, for file as a voucher to the Final Statement. (8) "Due United States for"—Under this heading will be shown all authorized stoppages for loss of or damage to Government Property or supplies as shown by Service Record. The names of articles damaged, lost or destroyed will not be stated. Stoppages under sentence of a court martial will show the character of court martial and date of order approving sentence, and the forfeiture exacted by the sentence, *e. g.*, "To forfeit $\frac{2}{3}$ of his pay per mo for 2 mos, SC, Jan. 5/20." If any part of the forfeiture has been deducted, the amount and pay roll on which deducted will be stated. In the event that stoppage of pay for absence without leave, or absence sick not in line of duty, occurring prior to the date to which last paid, has not been made, or if such absences have occurred since date to which last paid, these facts and the periods of such absences should be entered in this space substantially as follows, "AWOL (or Sick not LD, as the case may be) from Mar 7th

to 26/20 incl," in addition to their entry under Remarks. Where the absence or sickness occurred prior to date of last payment the entry will be continued to include the remark "Not deducted on 19. ., pay rolls."

Data to be stated under "Remarks" on Final Statement. a. Under "Remarks" will be stated whether or not the soldier is entitled to travel pay, and such additional data as will, within the notations under "Reason," "Due Soldier" and "Due United States," furnish the paying finance officer a full statement of the soldiers allowances and stoppages.

b. When a soldier is held in service to make good time lost by unauthorized absences, including absence in the custody of civil authorities resulting in a conviction; absence from duty on account of disease resulting from his intemperate use of drugs or liquors or other misconduct; while in confinement awaiting trial or disposition of his case, if the trial results in conviction, or while in confinement under sentence, a statement will be entered on the Final Statement giving the reason and inclusive dates of such absence from duty.

c. When held in military custody under sentence of court martial beyond his term of enlistment (except where his honorable discharge is imposed) the soldier will be furnished with final statement showing the actual date of discharge and the cause of detention.

d. When a soldier is discharged by reason of his detention by civil authority a final statement will be furnished containing in addition to the usual data, the date and cause of arrest, under "Remarks," and the remark "Not entitled to pay since date of arrest, nor to travel pay, unless acquitted or released without trial." No notation as to these court actions will be made on the final statement but a statement from the court will be required for submission with the final statement.

Final Statement of a soldier returned from desertion. In case final statement is given an enlisted man who has not been paid since return from desertion, his account will be so stated by the commanding officer as to enable the finance officer to definitely determine the amounts due the soldier and the United States at date of desertion, as distinguished from those accruing or incurred after return to military control; this will include a correct transcript of the order publishing the action disposing of the charge of desertion. In case deposits are forfeited the amounts of the same will be entered on the final statement under the head "Remarks" and the facts and authority for such forfeiture given.

Final Statement of a soldier upon retirement. Upon receipt of the order for retirement of a soldier, he will be furnished with a final statement, closing his accounts of pay, deposits and all allowances other than those of travel, as of the date of the receipt of the order. This will include a statement, with dates, of subsistence furnished.

Final Statement of a deceased soldier. In the case of a deceased soldier, one final statement only will be made out, which will accompany the Report of Death and duplicate inventories of effects to The Adjutant General of the Army. Nothing will be entered on the final statement regarding the cause of death or whether death was in line of duty or on account of the soldier's own misconduct. The amount of each deposit, with date, place and finance officer with whom deposited, will be noted in the inventory of his effects and on the accompanying final statement, with which the deposit book will be filed.

Final Statements not furnished in certain cases. When a soldier to be discharged has forfeited all pay and allowances and has no deposits due him, or is discharged by reason of fraudulent enlistment and has no deposits due him, no final statement will be furnished; in such case a full statement in writing will be furnished, in lieu of the final statements, showing why the latter was not furnished. If the soldier has deposits, a final statement will be issued containing a full statement of his accounts at the date of discharge in order that the finance officer may determine whether there is any balance of stoppages which should be collected from the amount due for deposits.

Travel allowances upon discharge. Soldiers discharged prior to expiration of term of enlistment *are* entitled or *are not* entitled, to travel allowances, according to the provisions of the decisions quoted below; and notation will be made accordingly under "Remarks" on the final statement.

"An enlisted man who is not dishonorably discharged nor discharged without honor, but is discharged under honorable conditions, although the word "honorably" is omitted from his discharge paper, may be said to be honorably discharged within the meaning of Section 3, of the act of Feb. 28, 1919. . . . (Dec Comptroller of Treasury, Apr. 17, 1919.)

The following discharges should be considered as not having been granted under "honorable conditions": (1) Dishonorable discharges imposed by sentence of a general court martial or military commission; (2) those granted enemy aliens and allied enemy aliens on account of such alienage; also those granted on account of alienage to neutral aliens who, under the provisions of the Act of July 9, 1918, withdrew their previously declared intentions to become American citizens to escape further service; (3) those granted on surgeon's certificate of disability, when the disability was not incurred in the line of duty and was due to wilful misconduct while in the service; (4) those granted for desertion when physically unfit and desertion is admitted under par. 126, Army Regulations; (5) . . . (6) those issued on account of fraudulent enlistment; (7) those issued on account of sentence to imprisonment by civil court, whether suspended or not; under par. 139, A. R.; (8) those granted to conscientious objectors whose discharges bear the following notation pursuant to Circular No. 97, WD, 1918: "This is a conscientious objector who has done no military duty whatsoever and who refused to wear the uniform."

All other soldiers who are honorably discharged prior to expiration of term of enlistment are entitled to travel pay, except when such is specially waived by the terms provided by regulations current at the time for re-enlistment, discharge by purchase, discharge for personal convenience, discharge to accept a commission or to enter a new enlistment period, etc. Where discharge is by purchase the amount of the purchase price will be noted on the final statement together with a statement of active service rendered in each enlistment terminated by honorable discharge since last discharge by purchase, giving dates of enlistment and discharge, with reasons for discharge. In every case of discharge for purpose of re-enlistment the final statement with discharge certificate will be withheld until the re-enlistment is accomplished. Notation of the cause of discharge will be made under "Remarks" on the final statement.

Notification of Discharge (Form No. 3, AGO). This form is prepared only when an enlisted man is discharged at a place where there is no one provided with funds to make payments on Final Statements, *i. e.*, either a disbursing officer or some source to which transfer of Final Statements may be made. The notification (single copy) will be prepared in the handwriting of the officer who signs the Final Statement and will show: (1) Name, grade, army serial number and organization of the soldier; (2) reason for separation from the service; (3) place and date of enlistment; (4) date to which soldier was last paid; (5) whether the service of the soldier is over 5, 10, 15, or 20 years; (6) amounts in words and figures due the soldier and due the United States; (7) whether or not the soldier is entitled to travel pay. The Finance Officer will decline to recognize the notification unless the items entered thereon are in the handwriting of the officer who signs the paper. The soldier will affix his signature to the notification or if he cannot write his name, such fact will be stated. The officer who signs the notification will inform the soldier of the location of the finance officer to whom he shall apply for payment and will *mail* the notification to that officer. In case of discharge on account of expiration of term of service the notification will be mailed at least one week before the discharge takes effect. In other cases of separation from active service the notification will be sent as soon as possible after the order for separation reaches the officer who prepares and signs the Final Statement, and in any event, before the Final Statement is signed.

FIFTH LESSON.

FURLOUGHS.

A furlough on Form No. 66, AGO, will be given to each enlisted man granted a furlough. The limits prescribed will be stated on the furlough so that if exceeded the furlough may be revoked and the soldier arrested. The authority under which a furlough is granted (whether under Army Regulations or pursuant to the orders of a superior) will be cited on the face of the furlough by the officer who prepared it, so that when the furlough is presented to a disbursing officer for payment of commutation of rations he may be assured that it is supported by the necessary orders if the period for which it is granted does not fall within the competency of the authority cited. The furlough will show under "Memoranda" signed by the company commander: (1) That the soldier was last paid to include a certain date; and (2) that he was actually rationed by his organization to include the last day of duty. Furloughs granted to soldiers serving beyond the continental limits of the United States for the purpose of returning thereto, take effect on the date the enlisted men reach the United States.

REPORT OF DEATH.

A Report of Death on Form No. 415, AGO, is made to the commanding officer concerned by the Surgeon or by the immediate commanding officer of the deceased, if there be no medical officer with the command. In all cases the report is prepared in triplicate and all copies submitted to the regimental, separate battalion, or other similar unit commander, or to the post, camp or other station commander, who after completing the first indorsement will forward all copies directly to the Adjutant General of the Army. In case of death of an officer or enlisted man while absent from his organization or command, a fourth copy of the Report of Death will be prepared and forwarded, with the Extract from Service Record, directly to the organization or station commander. Copies may be made by carbon process, but all copies as well as the original will be signed by the Surgeon and the Commanding Officer.

INVENTORY OF EFFECTS.

Upon the death of any person subject to military law as defined in the Second Article of War the company commander, or an officer designated by the commanding officer, will secure his effects and deliver them to the legal representatives or widow of the deceased, or to the designated summary court, if the widow or legal representatives are not present. Clothing issued to an enlisted man is the property of the United States and forms no part of his effects. The Inventory of Effects will be prepared in triplicate. The original and one copy of the Inventory of Effects will be forwarded to the Adjutant General of the Army *direct* accompanied by the original receipt of the Finance Officer for the cash from the proceeds and the papers enumerated in the 112th Article of War, if the effects are converted into cash, or accompanied by the report of the summary court if the effects are transmitted by the summary court to the widow, legal representative, or other person designated in the 112th Article of War. The third copy of the Inventory and the duplicate receipt from the Finance Officer for any cash belonging to the decedent's estate and for the proceeds from the sale of effects will be transmitted to the company or detachment commander for file with the Extract from Service Record of the deceased. If the effects are delivered to the widow or legal representative at the time of death, the company commander will prepare the Inventory of Effects in triplicate and deliver the original and one copy to the regimental, separate battalion, or similar unit commander, or to the post, camp or other station commander, as the case may be, to be forwarded to the Adjutant General of the Army with the Report of Death. In this case the articles may be described in general terms on the form instead of being itemized. The name of the widow or legal representative to whom the effects are delivered will be stated on the form. When the Inventory is prepared by the sum-

mary court the effects will be itemized in detail. Copies of the Inventory of Effects may be made by carbon process, but all copies as well as the original will be signed.

LEAVES OF ABSENCE.

a. Under such restrictions as may be imposed by higher authority, post commanders, officers commanding depots of supply, commanding officers of general hospitals, regimental commanders and separate or detached battalion commanders are authorized to grant leaves of absence to officers and warrant officers under their immediate commands, for periods not to exceed one month, or to extend to such periods, leaves of absence previously granted for lesser periods. The commander of a corps area, tactical division, or separate brigade may grant leaves of absence for four months, or they may extend to such periods those already granted. Application for leaves of absence of more than four months duration will be forwarded for the action of the War Department.

b. An application for leave must state: (1) Its desired duration; (2) the amount of leave due; (3) the amount of ordinary leave taken within the preceding four years, giving dates; and (4) whether he is on any school detail, member of general or special court or detail of any kind.

c. All applications for leave will be forwarded through military channels and intermediate commanders will indorse thereon their recommendations. If the officer or warrant officer is on special or other duty under orders of a higher commander, his application for leave will be referred to such commander for action.

d. In case of emergency or when local conditions so demand the post, camp or higher commander may restrict or temporarily suspend the authority of regimental or battalion commanders to grant leaves of absence.

e. Leaves of absence will not be granted so that a company will be left without a commissioned officer, or the post without two commissioned officers and competent medical attendance.

f. Applications for leave of absence on account of sickness will be referred by the commanding officer to the surgeon.

g. A leave of absence commences on the day following that on which the officer departs from his proper station. The day of departure, whatever the hour, is counted as a day of duty; the day of return as a day of absence.

h. Leaves of absence will be granted in terms of months and days, as "One month," "One month and ten days." Leave for one month commencing on the first day of a calendar month, will expire with the last day of the month, whatever its number of days. Commencing on an intermediate day, the leave will expire the day preceding the same day of the next month.

i. Verbal permits for less than 24 hours are not counted as leaves of absence, but every other absence of whatever duration, with date of departure and return, will be noted on the Reports of Change and Rosters.

j. If an officer who is custodian of regimental, company, mess, post exchange or band funds, is to be absent from the post on leave or otherwise for any period beyond 3 and less than 10 days, he will leave the funds with the officer acting in his place, taking memorandum receipts therefor. If he is to be absent for more than 10 days he will regularly transfer the funds to his successor.

OFFICERS PAY VOUCHERS.

Officers on the active list and retired officers assigned to active duty under laws entitling them to active pay or allowances, will be paid monthly on accounts certified by themselves according to prescribed forms. Payments are made on War Department Form No. 336.

THE RATION RETURN.

Definition of a ration. A ration is the allowance for the subsistence of one person for one day.

Classes of ration. Rations are classed as (1) garrison; (2) travel; (3) reserve; (4) field; (5) Filipino; and (6) emergency.

The garrison ration. The garrison ration is intended for troops in garrison and in time of peace for troops in maneuver camps.

The travel ration. The travel ration is intended for troops traveling otherwise than by marching and separated from cooking facilities.

The reserve ration. The reserve ration is carried on the persons of the men and in the field train and constitutes the reserve for field service.

The field ration. The field ration is the ration prescribed by the commander of the field forces.

The Filipino ration. The Filipino ration is for the use of Philippine Scouts.

The emergency ration. The emergency ration is furnished, in addition to other regular ration, for troops in active campaign and in the field in time of peace for purpose of instruction. Emergency rations *will not be opened except by order of an officer or in an extremity*, nor used when regular rations are available. Company commanders are responsible for the proper care and use of emergency rations carried on the persons of the men in their companies, and will cause the value of any emergency rations lost or damaged to be charged against the pay of the persons responsible for the loss or damage.

Components and substitute equivalents. a. The components and substitute equivalents of the garrison, reserve, travel and Filipino rations are prescribed in Army Regulations.

b. The ration to be issued to troops on the march in time of peace will be prescribed by the commander. It will be issued on the same basis as the garrison ration and will not exceed the allowance prescribed for that ration.

c. In time of war Philippine Scouts serving in the field will be furnished the same ration as troops of the Regular Army.

d. The Field ration consists of the reserve ration in whole or in part supplemented by articles of food corresponding generally with the components or substitute equivalents of the garrison ration procured locally or shipped from the rear.

Preparation of ration returns and issue of rations. a. Ration Returns will be submitted with the Morning Report on the day following the end of the calendar month, or the end of such period as the commanding officer may direct, for the rations used by the company during that month or period. At the beginning of the month the supply officer will communicate to company commanders the value of the ration for the ensuing month. Companies will open an account with the quartermaster and the subsistence stores required for the mess will be purchased on Charge Sales Slips in the name of the organization. The company commander will effect a settlement with the quartermaster at the end of the month or other ration period. Any unexpended balance due the organization, *not to exceed 25 per cent of the value of the net number of rations due the organization for the ration period*, will be paid in cash by the quartermaster to the organization commander when the settlement is affected. Any unexpended balance *in excess of the above 25 per cent will revert to the Government*. When the company is subsisted on the basis of a ration credit for the value of the garrison, travel or Filipino ration, and stores are purchased from the quartermaster on Charge Sales Slips, as explained above, the money value of the ration to be credited to the company is increased by certain percentages in case of messes that average less than 75 persons and decreased by certain percentages for messes that average more than 150 persons.

b. Ration Returns for companies will be signed by the company commander and approved by order of the commanding officer. Company commanders will verify the daily figures of the ration account in the Morning Report, and should keep a daily record of the financial condition of the ration account.

c. The method of determining the "Daily Average Strength for Rations" is explained under the "Morning Report."

d. Field, Reserve, Travel or Emergency Rations may be issued on Ration Returns submitted before or at the time of issue, as provided in Army Regulations. Ration

Returns upon which Emergency Rations are drawn will bear the certificate of the company commander to the effect that such rations are required for the enlisted men of the company and that the money value of any rations previously drawn by him and improperly used or lost have been charged against the persons responsible.

e. During active operations in the field company officers, upon their request, will be included by name on the ration return of the organization to which they belong, and, under like conditions, field and staff officers who do not belong to organizations having messes, will be included by name on the ration return of such organization as may be designated by the commanding officer. Payment for rations issued to officers will be made in the manner prescribed by Army Regulations.

Purchase of articles from outside sources. All components of the ration due a company are held available by the quartermaster to be furnished companies as required. If the company commander desires to secure articles of food, refreshment, etc., for the company mess, which are carried on the authorized list of supplies to be kept on hand by the quartermaster but which are not on hand at the time, he must secure written approval to purchase from outside sources. This approval must in all cases come *through the quartermaster*.

PROPERTY ACCOUNTING.

Definitions of "Accountability" and "Responsibility."—The terms "accountability" and "responsibility" are used in these regulations in the following senses:

a. An officer who carries property on Stock Record Cards or on Organization Equipment Record and has such property in his possession, either in use or in storage, has "accountability" and "responsibility" for the care and safe-keeping of such property. He has "accountability," but not "responsibility," for property which he has issued to others on Memorandum Receipt, and which property is thus in the possession of others. He carries such Memorandum Receipt property on his Stock Record Cards, or on Property Loan Record.

b. An officer who has given a Memorandum Receipt for property does not take such property up on Stock Record Cards or Property Loan Records and is therefore not "accountable" for such property, but is "responsible" for its care and safe-keeping until he has disposed of it in accordance with regulations.

c. "Accountability" is checked by an auditor. "Responsibility" for the care and safe-keeping of property devolves upon all officers concerned, which includes those having property in their possession and commanding officers under whose direction property is in storage or use.

Record of property in use by organizations and by enlisted men for duty with organizations. Property issued to organizations and to enlisted men for official duty as part of such organizations shall be carried as follows:

a. Articles of Equipment A and B, Table of Basic Allowances, shall be entered by *organization commanders* on Organization Equipment Record, excepting those articles of individual equipment of enlisted men that are entered by organization commanders on the Individual Equipment Record (A. G. O. Form No. 637) and dropped from all accountability, and excepting expendable articles, which shall be dropped from all accountability when issued by property officers. Organization commanders are accountable for all property carried on Organization Equipment Record. All other property, including property listed in Table V, Table of Basic Allowances, issued to organizations for current service is entered by *Property Officers* on Property Loan Record, and shall be receipted for and carried by *organization commanders*, on Memorandum Receipt. The property officer making the issue retains "accountability" for such property, and organization commanders shall *not* be accountable, but responsible, for such property.

b. Property in the hands of individuals other than that on Individual Equipment Record will be carried on Memorandum Receipt, and the issuing officer retains accountability for such property.

Responsibility of company officers. Commanding officers of companies, troops, batteries, or detachments will be responsible for the supplies issued to them for the use of their commands.

Responsibility of individual officers and enlisted men. Officers will be responsible for the property issued to them on Memorandum Receipt for their own use, or for the use of those under their control. Individual enlisted men will be responsible for the equipment and other property issued to them for their personal use.

Requisitioning property. a. Requisitions for property shall be made on P. & S. Form 160, regardless of the source from which the supplies are to be secured, or the character of the property requisitioned, except requisitions for clothing to be issued to individual enlisted men, which shall be made on Q. M. C. Form 165, and shall be made through the regimental or corresponding unit supply officer, where such an officer is present.

b. Separate requisitions shall be made for separate supply branches.

c. Requisitions for such materials as gasoline, oil, fuel, etc., will be made out monthly in advance, and will be drawn as required on Daily Issue Forms, P. & S. Forms 12, 13, and 14.

Shipments and issues of property. a. When property is shipped from one station to another the property officer making the shipment shall prepare four copies of Shipping Ticket, P. & S. Form 260. These tickets shall be routed as follows:

Two to consignee.

One to Finance Officer of the Department or Corps Area in which consignee is located.

One filed as voucher to Stock Record Cards.

b. When Articles of Equipment A and B, Table of Basic Allowances, or expendable articles are issued to organizations at the same station, three copies of the Shipping Ticket shall be prepared and routed as follows:

One to officer to whom property is issued.

One held for property auditor.

One (signed by the officer receiving the property or his authorized representative) filed as voucher to Stock Record Cards.

c. Shipments shall in every case be consigned to a property officer. Where intended specifically for a particular organization or individual, the Shipping Ticket will designate a property officer as consignee, adding such explanatory designation as may be required to indicate the individual or organization for which intended, such as, "For Troop C, 12th Cav." The property will be taken up and accounted for by the appropriate property officer and reissued by him.

Receiving issues of equipment by organizations. All Articles of Equipment A and B, Table of Basic Allowances, issued to an enlisted man, expendable articles excepted, will be accounted for both on his Individual Equipment Record and on the Organization Equipment Record, except that Articles of Equipment A and B, Table I, Tables of Basic Allowances (expendable articles excepted) will be entered on their Individual Equipment Records *only* and will be dropped from all other records. Shipping Tickets shall be retained and filed as a voucher to the records.

Receiving property turned in by organizations or individuals. When property has been carried on Organization Equipment Record is turned in to a property officer for credit, the receiving officer will prepare Receiving Reports and one extra copy, signed by the receiving officer or his representative, will be given to the officer returning the property to be used as a voucher to his records. Receiving Reports will *not* be made for property worn out by fair wear and tear in service and which is turned in and accepted in exchange for identical property in serviceable condition. When property which has been carried on Memorandum Receipt is returned for credit to the accountable officer, credit slips will be prepared and one copy, signed by the accountable officer or his legal representative, shall be given to the officer returning the property.

Accounting for lost, damaged, or destroyed property.

Cases where survey is required. When public property of a greater value than \$10 is lost, destroyed, or damaged, except through fair wear and tear in the service, a survey will be had in the following cases to determine the responsibility therefor and to recommend the disposition of such property:

a. Property lost, damaged, or destroyed in transit, when responsibility for such loss or damage is not accepted by the consignor or shipper, through the medium of an Over, Short, and Damaged Report, P. & S. Form 261, signed by the consignor or the authorized representative of the carrier.

b. Property of a greater value than \$10, ordered to be abandoned.

c. Property of a value greater than \$10, alleged to be damaged through fair wear and tear in the service, but which is not accepted for exchange or credit by the property officer.

d. Property issued to an enlisted man and found to be missing or damaged, upon his death, desertion, or upon his becoming insane.

e. Property lost, damaged, or destroyed through the neglect of an officer or enlisted man and for which he declines to accept charge against his pay.

f. Where the facts do not warrant the accountable officer in certifying, or making affidavit, to the fact that the loss, damage or destruction of the property was unavoidable, and not due to the fault of any one concerned.

g. Where survey is directed by the commanding officer.

Preparation and use of certificates or affidavits, in lieu of survey. a. When public property has been lost, damaged, or destroyed, except through fair wear and tear, under circumstances other than those set forth in above paragraph, the accountable officer may, in lieu of a report of survey, prepare and execute an affidavit or a certificate supported by one or more affidavits, setting forth the circumstances on which he will rely to show that the loss, damage, or destruction was unavoidable, and not due to the fault or neglect of any one concerned. Each certificate or affidavit prepared will contain the statement:

"The loss, damage or destruction of the property listed hereon was unavoidable and not due to the fault or neglect of any one concerned. This certificate (or affidavit) consists of . . . sheets."

b. All damaged property covered by such certificates or affidavits, disposition of which is provided for by specific regulations, will be disposed of in accordance with such regulations. All other property shown to be damaged will be turned over to a salvage officer, and his receipt for same will appear on the face of the certificate or affidavit.

c. Where the value of the property enumerated in the certificates or affidavits is greater than \$10, and less than \$500 (if the value of the property is greater than \$500 the certificates or affidavits must be approved by the commanding officer, and in case of disapproval by commanding officer survey must be had), the certificates and affidavits will be prepared in triplicate and the three copies, all of which must be completely executed and signed (and in the case of affidavits, sworn to), will be distributed as follows:

Two copies, the original and duplicate, to the Chief of Finance for the action of the Secretary of War.

One copy, the triplicate, to be retained by the accountable officer and filed with the credit vouchers of the property record to which it pertains.

d. If the value of the property is less than \$10, one copy only of the certificate and affidavit will be prepared; it will be filed with the credit vouchers of the property record to which it pertains as a voucher for dropping the property from the records.

e. Erasures, interlineations, and other alterations in certificates or affidavits will be initialed by the officer preparing the certificate or affidavit.

f. The money total *on each sheet* will be stated and initialed by the officer making the certificate or affidavit.

Statement of Charges. When an officer or enlisted man responsible for the loss, destruction, or damage accepts a proper charge against his pay, a Statement of Charges (Form No. 602, AGO) will be made in duplicate and filed with the credit vouchers of the property record to which it pertains.

Preparation of Report of Survey. An officer instituting a survey shall prepare three copies of the Report of Survey (Form No. 196, AGO), attach to each a copy of the Q. S. & D. Report, and forward them to the commanding officer. Erasures, interlineations, and other alterations in the written matter will be initialed by the officer making them. The money total on each sheet in the column headed "Value" will be initialed by the responsible officer. No other money total will be initialed.

Replacement of lost, damaged, or destroyed property. a. When public property has been damaged, *through fair wear and tear in the service*, it may be exchanged or credit secured by turning it in for salvage, accompanied by a certificate to the effect that its unserviceability results from fair wear and tear in the service, provided the said property is accepted by the salvage officer in accordance with regulations.

b. Property damaged which has been acted upon by a survey will be turned in for salvage, accompanied by approved survey report.

c. Property damaged which has been acted upon by certificate or affidavit will be turned in for salvage, accompanied by a copy of the certificate or affidavit.

d. If property which has been surveyed or acted on by certificate or affidavit is to be replaced, the retained copy of the Report of Survey, Certificate, or affidavit will, when presented to the accountable officer, be accepted by him as a requisition and will constitute authority for him to issue like articles.

e. Replacement of property lost, damaged, or destroyed by enlisted men may be similarly obtained by submitting Statement of Charges, Form No. 602, AGO, to the property officer as a requisition.

Property accounts of organizations.

Action taken when there is a change of organization commander. In the event of a change of organization commanders, the following method of procedure will be carried out:

a. Complete inventory will be made. After inventory, a certificate on Receiving Report blank will be prepared and executed in duplicate by succeeding officer, to the following effect:

"....., 19..

I certify that I have this date received from, predecessor, all property enumerated on Organization Equipment Record, as shown on the list of balances attached hereto, pertaining to, including last debit voucher No., dated, 19.., and last credit voucher No., dated, 19...

.....
(Name) Successor.

.....
(Rank and corps)

.....
(Official designation) "

b. If a shortage is found in property, the succeeding officer will enter property actually received on organization equipment record, in the next unused column.

c. Original copy of Receiving Report will be filed with organization equipment record and duplicate given to predecessor. An officer responsible for shortage will take immediate steps to clear same.

d. An adjustment will be made with the property officer for all property held on memorandum receipt whenever an organization changes station or the commanding officer of the organization is relieved and fresh receipts shall be given the property officer by the successor. Any discrepancies shall be adjusted *at the time* by a report of survey, certificate, or affidavit.

Transfers to other organizations. When property that is carried on Organization Equipment Record is to be transferred from one organization to another at the same station, the following method of procedure will be carried out:

a. The officer receiving the property will prepare Receiving Reports in triplicate and sign *on the original copy* an acknowledgment of the receipt of the property.

b. He will retain one copy as a voucher to his Organization Equipment Record and forward the other two copies to the transferring officer.

c. The transferring officer will submit the two copies of the Receiving Reports to the property officer. The property officer or his proper representative will note and sign on the copy signed by the receiving officer the words "Transfer noted," and return this copy to the transferring officer, who will file it as a voucher to Organization Equipment Record. The property officer will file the third copy of Receiving Report with the auditor's file of shipping tickets covering issues to the receiving organization.

d. The property officer will not be required to check the property transferred, nor will he have any responsibility in the transaction except to compare the two copies of the receiving reports submitted to him and see that they agree.

Transfers of enlisted men. a. Articles of equipment which the soldier is ordered to take with him, other than articles included in Table I, Table of Basic Allowances, will be noted on the Organization Equipment Record of the organization from which he is transferred and the soldier will sign a receipt on the back of this record for these articles. These articles will also be entered on his Individual Equipment Record. The commanding officer of the organization to which the soldier is transferred will take up these articles on Organization Equipment Record and sign a certificate to that effect on the back of the record. The soldier will be charged with any missing articles.

b. Until the new form of Organization Equipment Record is issued, the commanding officer of the organization from which the soldier is transferred will enter the articles referred to in paragraph (a) on a Shipping Ticket in duplicate, and the receipt of the soldier shall be obtained on both copies. One copy will be sent to the new station of the soldier, with his individual equipment record; the original will be retained as a voucher to the property loan record from which the articles are to be dropped. In the case of the transfer of several men to the same organization or station the articles will be listed on the same shipping ticket, and a list of the men entered thereon or attached thereto. The shipping ticket with the list will be forwarded with the individual equipment records. If the men upon arrival at the new station are assigned to different companies or detachments, the articles listed on the combined shipping ticket will be taken up by the property officer and new shipping tickets issued to the companies or detachments to which the men are assigned. If all of the men are assigned to the same company or detachment, the combined shipping ticket will be delivered to the company or detachment commander.

Expendable property. Property of the following classes is expendable and when issued by a property officer shall be dropped from accountability as previously stated in these lessons:

a. Articles which are "consumed" as distinguished from "worn" by proper use in the military service, such as foot powder, oil, paint, fuel, forage, etc.

b. Articles, such as spare or repair parts and components, to be used to complete or repair other articles and thereby losing their identity.

c. Such articles as are attached to and become a permanent part of a building, such as lighting fixtures, kitchen ranges, hot water tanks, water heaters, furnaces, etc.

Accounting for ammunition. Ammunition, when issued, shall be accounted for as follows:

a. When issued to organizations by a property officer it shall not be considered as expended, but shall be taken up and accounted for on the Organization Equipment Record of the organization to which it is issued and dropped from the records as expended when use, by a Shipping Ticket bearing the following certificate:

" I certify that the above ammunition was expended during the period 19.., to 19.. in (insert purpose for which used, such as target practice, action, guard duty, or authorized salutes); authorized allowance for this period.

.....
 (Name) (Rank) (Organization) "

Accounting for china and glassware. China and glassware broken in service, not through carelessness, and also other articles issued in accordance with a stated allowance for a given interval of time, will be dropped or exchanged in the following manner: The articles will be listed on a Shipping Ticket on which a certificate in the following form will be signed by the officer responsible for the property and forwarded to the property officer with the requisition for replacement:

" I certify that the above items of for which I am responsible have been (broken-consumed) not through carelessness of this organization during the period from to Maximum strength

.....
 (Signature) "

The shipping ticket with the certificate will be filed by the property officer with the memorandum receipts of the organization until an audit has been made.

SIXTH LESSON.

APPLICATION AND CO-ORDINATION.

This section describes the application and co-ordination of the various forms dealt with in specific routine cases encountered in company administration.

Change of grade. Upon receipt of the order for appointment or reduction or upon its issue in company orders or, in case of reduction by summary court-martial, upon receipt of copy of Charge Sheet, the company commander: (1) Makes entry on Morning Report; (2) makes entry on Service Record of the soldier under " Military Record," page 5, and in case of reduction as a disciplinary measure entry will be made under " Record of courts-martial," page 7, or " Company punishment," page 8. All entries on Service Record will be initialed by the company commander as required by instructions 12, thereon, at the time he initials the Morning Report containing the notation; (3) makes entry on Charge Sheet, when reduction is by court-martial, in the space provided therefor; (4) makes proper change in the Duty Roster; and (5) entry must also be made on Pay Card of the individual soldier and on Pay Rolls and Monthly Roster of the organization and a Report of Change submitted by the officer charged with these duties.

Gains by transfer or assignment. Upon receipt of the Service Record the company commander: (1) Enters the name in the proper place on the Duty Roster; (2) checks the Service Record to detect any errors or omissions and remedies any such defects without delay, makes notation under " Remarks " when soldier joined; (3) checks clothing and equipment in the soldiers possession with his Individual Equipment Record, charges deficiencies on Statement of Charges, and takes up on the Organization Equipment Record all articles, other than articles included in Table I, Table of Basic Allowances, listed on the Shipping Ticket accompanying the Service Record, if there are such articles; (4) checks Identification Tag with name and Army Serial Number on Service Record or, if there be no Identification Tag, issues one, properly stamped and charges same on Individual Equipment Record. When the soldier first joins the organization proper notation will be made under " Remarks " on the Morning Report to show change in strength and strength for rations. Entry will also be made on Pay Card of the individual soldier and his name will be shown on the Pay Rolls and Monthly Roster of the organization and a Report of Change rendered by the officer charged with these duties.

Loss by transfer. When a soldier is transferred from the company the company commander: (1) Fills out the next blank indorsement on the Service Record and

makes notation under head of "Transferred"; (2) prepares an Extract from Service Record for file in the company, first transmitting it to the personnel adjutant, who will make notation from it on the Pay Rolls and Pay Card, and then return it with the Pay Card to the company commander; (3) makes proper notations on the Individual Equipment Record; (4) makes notation on the Morning Report and closes entry in Duty Roster; (5) prepares Shipping Ticket covering all articles, except articles included in Table I, Table of Basic Allowances, which the soldier may take with him; (6) takes credit on the Organization Equipment Record for all articles for which Shipping Ticket has been prepared; (7) transmits Service Record, Individual Equipment Record, Pay Card, and one copy of Shipping Ticket, if any, to soldiers new station. Entry will also be made on the Pay Rolls and Monthly Roster of the organization and a Report of Change rendered by the officer charged with these duties.

Arrest. The arrest of a soldier is recorded in the company on the Morning Report and Duty Roster. No notation of arrest is made on the Soldier's Service Record.

Confinement. The confinement of a soldier will be noted on the Morning Report and Duty Roster. No notation of confinement will be made on the Soldier's Service Record unless he is tried and convicted. If tried and convicted, the time to be made good under the 107th Article of War begins to run from the date the soldier was confined with a view to trial, and this date should be entered on the Service Record under the heading "Time lost to be made good under A. W. 107," on page 6 of the record.

Special duty. When a soldier is placed on special duty notation is made (1) on the Morning Report, the nature of the duty not being specified, and (2) on the Duty Roster.

Sickness. All cases of sickness, as shown by the Company Sick Report, will be noted on the Duty Roster and the Morning Report. Inclusive dates of sickness will be noted on the Service Record. This cannot be done until the soldier has been returned to a duty status or his case otherwise disposed of. If the sickness is the result of the soldiers own intemperate use of drugs or alcoholic liquors or other misconduct, he is required to make the time lost before being discharged on account of expiration of service and receives no pay for the time he is unable to perform duty. The record of the time to be made good is kept under the heading "Time lost to be made good under A. W. 107" on the soldiers Service Record. Whenever a soldier is transferred to a hospital at another post, camp or station, or to a hospital not under the jurisdiction of the commanding officer of the station of the soldier's company and is carried as "Absent sick" on the Company Morning Report, the Soldier's Service Record, Pay Card, and Individual Equipment Record will be closed out. Extract of Service Record and Report of Change will be prepared, and all disposed of as in the case of a loss by transfer.

Detached service. When a soldier enters upon a duty that takes him away from his post, camp, or station as well as his company notation will be made on the Morning Report and Duty Roster of the company and his Service Record, Pay Card, and Individual Equipment Record will be closed out and disposed of as in the case of a loss by transfer. Extract of Service Record will be prepared and filed in the field Desk in place of the Service Record. Unless the soldier is detached for a considerable period no Shipping Tickets need be accomplished, but if the detached service is to last for a considerable period the Organization Equipment Record will be closed out and Shipping Tickets prepared as in the case of a loss by transfer. Entries will be made on the Monthly Roster, if the absence extends beyond the last day of a month, and Report of Change will, in all cases, be rendered by the officer charged with this duty.

Leave of absence. The departure of an officer from his station on leave of absence will be noted on the Morning Report and, if the leave extends beyond the last day of the month, it will be noted on the Monthly Roster by the officer charged with its preparation. A Report of Change will be submitted in every case. Should

the officer going on leave be the custodian of a Company Fund and the period of leave granted is more than 10 days, he will regularly transfer the funds to his successor; if the leave is less than 11 and more than 3 days he will leave the funds with the officer acting in place, taking a Memorandum Receipt therefor. An officer responsible for Government property will not transfer his responsibility therefor during an absence of less than one month unless ordered to do so by competent authority.

Furloughs. The absence of a soldier on furlough will be noted on the Morning Report and Duty Roster. The period of absence will also be entered under the heading "Furloughs" on the Service Record. Change will be prepared and, if the absence extends the last day of the month, it will be noted on the Monthly Roster by the officer charged with their preparation.

Absence without leave. An absence without leave of twenty-four hours or more will be entered on the Morning Report, Duty Roster, Pay Card, and Service Record. The inclusive dates of absence will be entered on the Service Record under the heading "Time required to be made good under the 107th Article of War." A Report of Change will be prepared and, if the period of absence extends beyond the last day of the month, it will be entered on the Monthly Roster by the officer charged with their preparation. If the case is not amenable to company discipline, charges will be prepared when the soldier is returned to military control. If the soldier fails to return and is subsequently dropped as a deserter, any Government property for which he is responsible and which cannot be accounted for will be acted on by a Report of Survey.

Discharge. The discharge of an enlisted man will be noted on the Morning Report and Duty Roster. In closing individual records and preparing discharge papers, the following procedure will be followed: (1) The Service Record should be checked carefully to see that it is complete and up to date. Any omissions or inaccuracies should be supplied or corrected and initialed by the company commander; (2) if the soldier has an allotment running, it will be discontinued; (3) if the Service Record shows that the soldier has deposits, his deposit book will be obtained from him and the entries therein checked with the entries on the Service Record, care being taken to see that the date, amount, and name of the Finance Officer correspond in the case of each deposit. The deposit book should then be returned to the soldier with instructions to present it to the Finance Officer with his Final Statement. If the soldier claims to have lost the Deposit Book the company commander will cause his affidavit to that effect to be taken and attached to the Final Statement. The affidavit must state the circumstances attending the loss of the book and show affirmatively that the soldier has not sold or assigned it; (4) all articles of clothing and equipment in the possession of the soldier will be turned in and the Individual Equipment Record completed and placed in the one year file of the Field Desk. Missing articles will be entered on a Statement of Charges and charged on Final Statement; (5) the Extract from Service Record will be completed, except the items "Last paid in full," "Transportation," "Subsistence," "Partial Payments," and "Over Payments" and transmitted to the Personnel Adjutant. The Personnel Adjutant, after making the necessary entries on the Pay Card of the soldier and the Pay Roll of the company, will write or stamp the words "Noted on pay rolls and pay card" at the bottom of the first page of the Extract from Service Record, and will return it to the company with the soldiers pay card. When the Extract from Service Record is received back in the company, the entries will be made under the items "Last paid in full," "Transportation," "Subsistence," "Partial Payments," and "Over Payments." Any charges appearing on the Pay Card under an item not otherwise provided for on the Extract from Service Record, will be added to the entries under "Other Stoppages." When the soldier is discharged while absent from his company, the Extract from Service Record will be prepared in duplicate and one copy furnished to his company commander and the fact noted under "Remarks" on the original extract; (6) the Service Record will then be closed and the final indorsement prepared for transmission to The Adjutant General of the Army, or to the officer charged with keeping the records of general

prisoners at the place the soldier is confined in case of his honorable discharge, the execution of which is suspended; (7) the soldier's Final Statement, and his Discharge Certificate in case of discharge, will be prepared from the closed Service Record. The Discharge Certificate will be sent to headquarters with the Morning Report and after being signed will be returned to the company for delivery to the soldier; (8) entry will also be made on the Pay Rolls and Monthly Roster of the organization and a Report of Change rendered by the officer charged with these duties.

Death. When a soldier dies the company commander will: (1) Secure all of the effects of the deceased for delivery to the widow or legal representative of the deceased, if present, or to the summary court if such representative is not present; (2) prepare the Inventory of Effects; (3) prepare and submit Notification of separation from Active Service, and Discontinue the Soldier's Allotment, if he has one running; (4) prepare and submit Report of Death, if no Surgeon is with the command; (5) close out the Individual Equipment Record of the deceased and make proper notation, if required, on the Organization Equipment Record; (6) close out the Service Record and Pay Card as explained in case of discharge; (7) prepare one copy of Final Statement for transmission with the Service Record; (8) prepare Extract from Service Record for file in the company records; (9) if the deceased has Deposits his Deposit Book will be forwarded with the Service Record and Final Statement; (10) make proper entries on Morning Report and Duty Roster. Entry will also be made on the Pay Rolls and Monthly Roster of the organization and a Report of Change rendered by the officer charged with these duties.

THE COMPANY FIELD DESK.

Use of the field desk prescribed. Except when a special field desk is prescribed for a staff corps or department, the company field desk, small, prescribed in equipment tables, will be used in all companies, troops, batteries, and detachments, in accordance with the methods prescribed to the exclusion of all other containers for records. Two field desks, small, are issued to each company. For convenience the two desks are hereinafter referred to as the company field desk A and the company field desk B.

The service records and miscellaneous records will be kept habitually in their respective trays in the field desk A. The trays may be removed from the desk temporarily to facilitate work upon records, but upon completion of work the trays will be returned to the desk. The other contents of the field desk A, as provided for and described in this section, will be kept in the desk at all times, both in garrison and in the field. The five-year file and the permanent file will be kept in their respective trays in the field desk B.

Company field desk A. The company field desk A is a part of equipment A and will accompany the organization on all changes of station and in the field.

When equipped for the field, the desk will contain the necessary office supplies and blank forms for a period of three months, and the records and incidentals essential to the administration of the company in the field.

The lid section provides space for the loose-leaf binder containing the individual equipment records with a supply of Form No. 637, A. G. O.; the blank forms the disposition of which is not otherwise prescribed; and the regulations to be carried.

The bottom section packed for the field will contain the service record tray and the miscellaneous record tray. These trays will contain that part of the live file which must be accessible in the field.

Company, field desk B. Company field desk B is part of equipment B, but will be permanently issued to and retained by the company. Upon change of station from one post or camp or station of a relatively permanent nature to another post or to a camp or station of a relatively permanent nature, the desk will be transported as freight. When the company takes the field, the desk and the records therein contained will be stored at the last permanent station of the company, at a mobilization or concentration camp, or such other place as may be designated by the division or department commander or higher authority.

The field desk B will contain the five-year file and the permanent file, one tray for each file, and such other books and manuals as are authorized to be carried and for which space is available in the desk.

Filing cards. The filing equipment furnished for use in company field desks consists of:

For use in the field desk A—

1. Twelve month cards (yellow) and 31 date cards (pink) for use as a "Reminder."
2. Three cards headed respectively "Non-commissioned officers," "Privates, first class," and "Privates," for use in the service-record tray.
3. Three cards (pink) headed respectively "Clothing," "Horses," and "Memoranda," for use in the miscellaneous record tray.

For use in the field desk B—

1. Twenty-five alphabetical cards (blue); one card headed "Returns," for use in the permanent file.
2. Six cards (pink) headed respectively "Target record," "First year," "Second year," "Third year," "Fourth year," and "Fifth year," for use in the five-year file.

Service record tray. The service record tray will contain the service records of the men of the company subdivided under three heads in roster order by the guide cards "Non-commissioned officers," "Privates, first class," and "Privates."

Service records will be filed in the tray as follows: In front of the guide card "Non-commissioned officers" will be filed the service records of the non-commissioned officers of the company in each grade, the records being filed in the order of the date of warrant; following the non-commissioned officers and in front of the guide card "Private, first class" will be filed the service records of the privates, first class, in alphabetical order; following this group and in front of the guide card "Privates" will be filed the service records of the privates in alphabetical order. Specialists are carried as Pvts. 1st Cl., or Pvts.

The miscellaneous record tray. The miscellaneous record tray will contain the "Reminder," and the sections designated by the headings, "Memoranda," "Clothing," and "Horses," in that order, followed by the current correspondence book with document file, and current company council book with vouchers.

The "Reminder." The "Reminder" will consist of the month cards and date cards, which are placed in chronological order in the front of the miscellaneous tray, the month cards being in rear of date cards.

The date cards will be rotated as follows: On the morning of January 2, the date card "1" will be placed in rear of month card for "January" and in front of and next to the month card "February," the procedure being followed daily with the remaining date cards for the month in order, so that following the 31st of January the date card 31 will uncover the January card. The former will be filed in rear of date card 30 and in front of month card "February," and the January card will be filed in rear of month card "December," leaving the "Reminder" for the month of February set up in normal order with the blank daily report books for the month presented for use.

In setting up the "Reminder," the morning report, daily sick report, and duty roster, for the current month will be filed in the front of the "Reminder" section; and supplies of these blanks for the ensuing quarter will be filed in similar sets in front of the next three month cards. A complete set of these blank forms will be obtained by each company from the adjutant on the first of each month so that the desk will always have a quarterly supply of reports and blank forms on hand.

Blank forms for requisitions, special reports, and returns, normally rendered on a specific date, will be filed in front of the date card of the day on which preparation is to be effected.

A complete set of reminder slips for use in the "Reminder" should be prepared. These slips should anticipate all the items of administration in the company in time for their accomplishment and should be prepared of size $3\frac{1}{2}$ by 8 inches.

The "Reminder" will also be used as a live file for papers destined for the five-year file or permanent file, but whose disposition in these files is to be postponed until the papers cease to be of current import. Such papers should be filed in front of the index card of the month in which they are filed, and moved to the back of the "Reminder" with it. When the card next appears a year later the papers filed with it will be placed in the permanent file; or in the first year section of the five-year file until the 1st of January, when they will pass into the second year section. If it is desirable that a paper be retained in the "Reminder" for a lesser period, it should be filed with the card for the month when its disposition in the five-year or permanent file is desired. It will be seen from the above that the live file in the "Reminder" is supplemented in the case of papers for the five-year file by the first-year section of that file, in which papers remain from the time they leave the "Reminder" until the succeeding 1st of January.

Memoranda. In front of the guide card "Memoranda" will be filed memoranda, the filing of which is not directed elsewhere.

Clothing. In front of the guide card "Clothing" will be filed the retained requisitions for clothing (P. & S. Form No. 160), and individual clothing slips (Q. M. C. Form No. 165). These will be filed until checked by the auditor, when they may be destroyed.

Public Animals. In front of the guide card "Horses" will be filed the descriptive cards of public animals (Form No. 277, A. G. O.) pertaining to the organization. If no use for this file is anticipated it may be replaced by other matter. (Accountability for such animals as are furnished to organizations not mounted by the supply company will remain with the supply company, which ordinarily retains the descriptive cards of the animals.)

Correspondence book and document file. The current correspondence book, and such part of the document file as will be taken when the company goes into the field, will be filed behind the above items in the miscellaneous tray. The close correspondence books and their corresponding document files will be filed in the "permanent file" when they have ceased to be of current interest or importance.

Company council book. The company council book, with current vouchers, will be filed behind the correspondence book in the miscellaneous tray. The closed company council books will be filed in the five-year file.

When the company takes the field the last closed company council book and correspondence book, with its document file, may be taken in the miscellaneous tray if desired.

Property records. The property loan record, with its accompanying vouchers, *i. e.*, shipping tickets, receiving reports, statements of charges, reports of survey, certificates, and inventory and inspection reports, will be filed in the lower left section of the top of the field desk, together with a supply of each of these blanks.

Individual equipment record. The individual equipment record (Form No. 637, A. G. O.) will be filed in the loose-leaf binder provided for the purpose. This binder with its contents will be kept in the right upper section of the top of the field desk. Blank forms for these records will be placed in the binder behind the current records.

Five-year file section. The division cards for this file consist of the "first year," "second year," "third year," "fourth year," and "fifth year" cards, devised to separate the papers to be retained for five years.

All papers destined for file in the five-year file, including sick reports, company range practice records, and company council books, when withdrawn from the live file, will be filed in front of the guide card "first year." The "target record" card follows the fifth year section.

On January 1 of each year the first-year card will be moved to the front of the five-year file, being replaced by the second-year card. The other year cards will be moved forward: Third in place of second, fourth in place of third, fifth in place of fourth; so that on each January 1 after the fifth year of filing, the year's discard will be found in rear of the fifth year card. The papers in rear of the fifth year card will

be removed and destroyed. In this manner all dead records will be automatically worked from the file, and the first-year card will be in place to receive the papers to be filed during the ensuing year.

Target record. In front of the guide card "target record" in the five-year file tray will be filed individual records of company target practice. When a soldier leaves the company permanently or at the expiration of his enlistment his retained individual target records will be given to him. The compiled records and reports of the company range practice for the current year will be filed in the "Reminder" until the next practice, when they will be filed in the first year section of the five-year file.

The permanent file. In the permanent file will be filed—

1. The extracts from service records (Form No. 29a, A. G. O.).
2. The closed morning reports (Form No. 332, A. G. O.), monthly roster of troops (Form No. 703, A. G. O.), and, if rendered, company returns (Form No. 30, A. G. O.).
3. All company orders, and documents of permanent nature but not of current importance.

4. Completed correspondence books with their respective document files.

The extracts from service records will be transferred from the individual record tray to the alphabetical section of the permanent file.

The closed morning reports and company returns will be transferred from the "Reminder" section of the live file to the permanent file one year from date on which closed. They will be filed in the permanent file in chronological order in front of the guide card "Returns" in rear of the alphabetical section.

Regulations, etc. Army Regulations, Extracts from General Orders and Bulletins, and Special Regulations No. 40, No. 56, No. 57, No. 58, No. 72, No. 77, and Cirs. No. 377 (amended) and No. 498, W. D., 1919, will be carried in the lower right section of the top of field desk A. It is not contemplated that other books and manuals will be carried in this desk; they should be carried in field desk B.

Blank forms. Companies will procure their supply of blank forms from regimental or post headquarters.

A three months' supply will be kept in the company field desk A at all times. Company commanders will make monthly informal requests for blank forms required to replace those used from their three months' supply.

The blank forms carried in the company field desk A will be filed in the upper section and in the two record trays as follows:

1. In the service record tray:

6 extracts from service records (Form No. 29a, A. G. O.), filed in rear of guide card "Privates."

6 service records (Form No. 29, A. G. O.), filed in rear of the blank extract from service records.

2. In the miscellaneous record tray:

4 morning reports (Form No. 332, A. G. O.).

4 sick reports (Form No. 339, A. G. O.).

4 duty rosters (Form No. 342, A. G. O.).

One each of these three forms for use during the current month are filed in front of the current date card. One set is filed in front of the cards for the three months next succeeding the current month.

20 individual clothing slips (Q. M. C. Form No. 165), filed in front of and next to guide card "Clothing." (If the $4\frac{1}{4} \times 10\frac{3}{4}$ forms are used, they will be kept in the top of the field desk.)

3. In the top of the field desk:

6 property loan records (P. & S. Form No. 263a).

6 requisitions (P. & S. Form No. 160, in duplicate).

6 receiving reports (P. & S. Form No. 257, in triplicate).

6 shipping tickets (P. & S. Form No. 260, in duplicate).

6 notices of soldier's deposit (Q. M. C. Form No. 8a).

- 10 charge sheets (Form No. 594, A. G. O.).
- 6 notices of discontinuance of soldier's allotment (Q. M. C. Form No. 39).
- 6 inventories of effects (Form No. 34, A. G. O.)
- 6 reports of survey (Form No. 196, A. G. O.).
- 10 soldier's allotments (Q. M. C. Form No. 38).
- 6 statements of charges (Form No. 602, A. G. O.).
- 6 reports of change (Forms No. 647a and 648a, A. G. O.).
- 6 company returns (Forms No. 30, A. G. O.).
- 6 rosters of troops (Form No. 703, A. G. O.).

These forms will be filed in the left lower section of the top of the field desk.

4. In the back of the loose-leaf binder, in addition to current individual equipment records, will be filed:

- 10 blank individual equipment records (Form No. 637, A. G. O.).

The blank forms are filed in rear of the current records in the loose-leaf binder in the lid section of the desk.

Stationery. The following supply of stationery will be carried in the field desk wherever space is afforded:

- 4 blocks, memo or scratch note.
- 1 book, duplicating, letter size.
- 2 quires, letter paper, typewriter.
- 24 envelopes, official.
- 1 gross bands, rubber, No. 18.
- 1 eraser, rubber, ink and pencil.
- 1 eraser, steel.
- 1 box fasteners, paper.
- 1 tin ink, black tablets.
- 1 tin ink, red tablets.
- 1 tube paste.
- 4 pencils, indelible.
- 2 pencils, lead.
- 1 pencil, colored (blue and red).
- 2 penholders.
- 12 pens, steel.
- 1 cone pins, office.
- 1 ruler, office, 12-inch.
- 6 blotters (4 by 9½ inch).
- 1 blotter (12 by 19 inch).

(Cut 1 inch from the ends of the 4 by 9½ inch blotters and file five of them in rear of the date cards transferred from the current month to rear of the month card and in front of the month card of coming month, where they will serve as a division between the two months. File the blotter in use with the daily reports in front of the "Reminder." Fasten a 12 by 19 inch blotter to the lapboard with thumb tacks.)

Packing the desk. To pack the records for moving, remove the loose block from the front of the tray, move the records forward against the front of the tray, loosen the thumbscrews of the compressor block at the rear of the records, move the block forward, compressing the record between the compressor block and the front of the tray (not too tightly), invert the front block and press it (wedge-like) between the compressor block and the records. The records are then snugly packed to prevent them from being dislodged and injured when the desk is handled.

Having compressed the records in the trays, turn the trays end for end in the desk, so that the weight of the records will not rest against the compressor block.

Having compressed the records and inverted the trays, place the lapboard, blotter side down, over the trays to protect the contents of the tray and serve as a buffer between the trays and the hinged lid of the top of the desk. When the desk is packed care will be taken to place the lapboard in position before closing the desk, because its omission may cause the hinged lid to break loose, since it is not intended to bear the weight of the records carried in the desk.

TACTICS.
TABLE OF CONTENTS.

INTRODUCTION.

FIRST LESSON.

ORGANIZATION. WEAPONS EMPLOYED IN MODERN
WARFARE.

SECOND LESSON.

GENERAL PROCEDURE OF BATTLE.

THIRD LESSON.

THE APPLICATORY SYSTEM OF TACTICAL INSTRUCTION.

FOURTH LESSON.

THE SOLUTION OF TACTICAL PROBLEMS.

FIFTH LESSON.

PREPARATION OF PROBLEMS. USE OF THE SAND TABLE.

SIXTH LESSON.

ORDERS.

SEVENTH LESSON.

ORDERS (Continued).

EIGHTH LESSON.

GENERAL PROBLEMS OF THE ATTACK. PRINCIPLES OF
OFFENSIVE COMBAT.

NINTH LESSON.

PRINCIPLES OF OFFENSIVE COMBAT (Continued).

TENTH LESSON.

PRINCIPLES OF OFFENSIVE COMBAT (Continued).

ELEVENTH LESSON.

FORMS OF ATTACK. GENERAL PROBLEMS OF THE
DEFENSE. TACTICS OF THE DEFENSE.

TWELFTH LESSON.

INTELLIGENCE.

THIRTEENTH LESSON.

INTERCOMMUNICATION.

FOURTEENTH LESSON.

THE INFANTRY RIFLE COMPANY. APPROACH MARCH.
ENTRY INTO THE FIRE FIGHT.

FIFTEENTH LESSON.

THE RIFLE COMPANY. CONDUCT OF THE ATTACK.

SIXTEENTH LESSON.

THE RIFLE PLATOON. ORGANIZATION. TRAINING.

SEVENTEENTH LESSON.

THE RIFLE PLATOON. APPROACH MARCH.

EIGHTEENTH LESSON.

THE RIFLE PLATOON. ENTRY INTO THE ATTACK.

NINETEENTH LESSON.

THE RIFLE PLATOON. CONDUCT OF THE ATTACK.

PRACTICAL EXERCISES.

OFFENSIVE COMBAT.

TWENTIETH LESSON.

DISPOSITIONS AND PLANS OF THE DEFENSE.

TWENTY-FIRST LESSON.

PROBLEMS AND DUTIES OF INFANTRY IN DEFENSE
(Battalion and Company).

TWENTY-SECOND LESSON.

THE INFANTRY RIFLE PLATOON IN DEFENSE.

TWENTY-THIRD LESSON.

ILLUSTRATIVE EXAMPLE. DEFENSE PLANS OF SMALL
UNITS.

APPENDIX.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.



INFANTRY AND ACCOMPANYING WEAPONS IN ATTACK

Supported by overhead fire of auxiliary
weapons of the battalion the infantry
envelops the hostile resistance

3 INCH FIELD GUN

MINOR TACTICS.

TACTICS.

INTRODUCTION.

Tactics is the art of leading or commanding troops in maneuver or combat.

Minor Tactics embraces the leadership of the smaller units—usually any force less than a division, and consisting entirely or almost entirely of one arm.

This course in minor tactics covers the leadership of the small infantry units, from the squad to the company, inclusive. The combat tactics of the fire units, the squad and section, are covered in the course in Musketry, those of the platoon and company are included herein.

Minor Tactics, including Musketry, is the most important subject in the course of training for non-commissioned officers and junior officers of infantry. All other subjects in the complete course of military instruction are to be regarded as subsidiary to tactics. They are designed to qualify the student for the exercise of leadership and command in maneuver and combat, and to enable him to effectively train the men entrusted to his care.

The ability to lead troops in combat is accordingly the culmination, the final test of all military training.

No officer is fully qualified to exercise high command unless he is familiar by study and training with the tactics of the small units, and a knowledge of these tactics must accordingly form the foundation for the training of officers for the higher commands. The non-commissioned officer who is fully qualified to lead a squad may safely be intrusted with the command of a section. The qualified section leader is fitted to undertake the duties of platoon leader, and so on. In each grade a properly instructed officer acquires the proficiency which justifies his promotion to the next higher grade.

This course has been prepared to meet the needs of the non-commissioned officers and junior officers who must train and lead the small infantry units of our great citizen armies in the event of future wars. It aims to present in a clear and definite fashion the simple principles of minor tactics which the experiences of war have proven to be sound, and to show in a practical way the manner in which these principles are applied to the actual duties which these officers will be called upon to perform.

The tactics of the larger units, the operations of the combined arms, and the general procedure of battle are treated in outline only, to the extent to which they should be known to junior officers of infantry. The problems of the company commander are covered in a definite manner, and those of the platoon leader and his subordinates in minutest detail.

It is to be remembered that the greatest battles are made up of the small combats of the infantry platoons. These small infantry units win the local successes which enable the great army to win the battle. The infantry platoon is the keen cutting edge of the military tool, and its leader is the most important man in the army. All other arms are auxiliary to the infantry. They exist solely to aid the infantry platoon in defeating its enemy.

Accordingly all officers of all arms and of whatever rank should be familiar with the tactics of small infantry units. Those who direct technical troops, perform staff duty or exercise higher command must indeed know more, but no officer can afford to know less.

The tactical doctrine herein set forth is an American doctrine, suited to the temper of the American people and the genius of the American soldier, and based on American experiences in war.

In this course in tactics no sharp distinction is made between the so-called "open" or "mobile" warfare, and "stabilized" warfare. Each is regarded as merely a situation or phase of combat which may recur upon time to time. The same principles of warfare are applicable to both situations.

Decisive results are achieved only by the attack. This fact, taken in connection with the aggressive spirit of America and her vast resources of men and materials, indicate plainly that in our future wars, as in those of the past, we will be the aggressor. The attack in mobile warfare makes the greatest demands upon the infantry and requires the highest degree of training. Troops which can attack can defend. Accordingly a proper system of training for American infantry should be based upon the requirements of maneuver and attack in open warfare, and offensive combat is accordingly regarded as the most important part of infantry training—the culmination, in fact, of all training for war.

Tactics is by far the greatest and most fascinating of all games, and its study can be and should be made interesting. There is no reason why it should be dull or disagreeable. When weather and other conditions are favorable outdoor exercises should be arranged. At other times a great variety of indoor exercises are readily carried out. The instruction will be effective in proportion as it is made interesting to the students.

The method followed in this text and hereinafter described in detail, is what is known as the applicatory system. It has stood the test of time and war, and is now universally adopted in all armies.

The more important general principles of combat, and a bird's-eye view of battle in its larger aspect have been included, for the reason that subordinate commanders and leaders should have a general knowledge of these things. The actual duties of squad, section and platoon leaders, and the manner in which they should perform these duties are treated at length in this course and the preceding course in Musketry.

It is responsibility above all else that develops character, initiative and judgment. The knowledge of responsibility strengthens even the weak, and often calls into action powers they were not previously suspected of possessing. It is for this reason that the most important object in the military training of officers is the development of responsibility. The supreme commander and each subordinate within his own sphere, should be required to exercise his own judgment, and be responsible for his own actions. Thus alone can he be qualified to meet the exigencies that are constantly arising in warfare. Military writings are accordingly filled with cautions such as "Do not interfere with your subordinates, nor usurp their prerogatives," "Tell a subordinate what you want him to do, not how he is to do it," "Avoid orders too much in detail," etc.

How then, in time of peace, may military responsibility, and the benefits resulting therefrom be attained? When an officer reads military history and text-books on the art of war, the responsibility for the facts alleged or the conclusions and deductions made rests entirely on the authors. The student gains from such works a certain amount of knowledge, but he certainly assumes no mental responsibility. When, however, he undertakes an independent solution of a tactical *problem* the entire responsibility for this solution rests on his shoulders alone.

The applicatory system consists in the continued solution of practical problems, simulating the conditions of active warfare. This text is designed to supply in compact form the guidance and assistance required by student and instructor in the applicatory method of tactical training.

The problems given in the text are necessarily very limited in number. They are intended simply as illustrative examples of the nature of such problems, and not as a complete course of instruction. By following out these problems the students will learn the usual forms of such, the nature of the solutions desired, and the mental

processes by which these solutions are arrived at. But this alone is manifestly insufficient. To merely follow the processes of another's mind does not develop initiative, judgment, independence of thought and responsibility.

The instructor should prepare additional problems for independent solution by his students. Almost any sentence in the theoretical lessons in this course may be made the basis of an instructive problem.

The various service schools, including the School of the Line, the Infantry, Cavalry, Engineer, and Coast Artillery Schools, etc., constantly issue excellent problems in Minor Tactics, involving the operations of small infantry units. These problems are laid on local maps or maps of the vicinity of Gettysburg, Pa., any of which are easily obtained at small cost. The problems may be readily adapted to the sand table. Most of the schools have a "mailing list"—all of them will have. It is recommended that colleges and National Guard organizations which are pursuing the study of tactics, place themselves on the mailing lists of one or more of these schools. In this way the latest tactical exercises, representing the latest developments and best thought of the schools will be made available for instructional purposes.

The aim of this entire course of military instruction is to develop *leaders of men*. The powers of mind and the traits of character which distinguish the leader are the same in the pursuits of peace as in the conduct of war. It is only in the nature of the technical training required that we find a difference. Common sense, good judgment, the ability to marshal and weigh the evidence and correctly estimate the situation, the power to make a decision, to formulate a clean-cut plan of action and to express it in clear, direct and forceful language, the courage to cling to one's plans and carry them out vigorously and promptly in spite of all difficulties, the traits of mind and character which enable a man to command the confidence, respect and loyalty of his subordinates, and to call forth their best efforts—all of these things are as characteristic of the successful business man or captain of industry as of the successful leader of troops in battle. It is confidently asserted that there is no other known form of training better fitted to develop these essential characteristics of leadership than a proper course of military instruction.

It is to be hoped that those who are interested in the education of our young men, even from a purely civil point of view, will not overlook these important truths. A course of military training which develops leaders of men, is far from being a waste of time, even in the happy but unlikely event that we shall see no more wars.

SUGGESTIONS FOR THE CONDUCT OF THE COURSE.

The course in Minor Tactics will be found most thorough and complete. It covers in minute detail the duties which junior officers of infantry will actually be called upon to perform.

These details as to the leadership of the small infantry units, constitute the important and essential part of the course to those for whom it has been prepared.

A properly educated junior officer, in addition to being intimately familiar with his own particular duties, should have a general knowledge of his profession, in its larger aspect. Thus equipped he will be better fitted to perform his duties, and ultimately to rise, step by step, to the exercise of higher command and greater responsibility.

With this fact in mind the first 13 lessons of the course have been devoted to a general survey of the art of war, and the methods of the applicatory system of instruction.

If the total time available for the course is insufficient to complete the subject as herein treated, the general subjects may be covered as briefly as desired, but it is believed that they should not be entirely omitted. Thus: The methods of the applicatory system will be revealed in the natural progress of the course; the subject of orders may be read or studied in connection with the actual preparation of orders; the sand table may be introduced when there is occasion to use it, etc.

It is suggested also that these early lessons, or the most essential parts of them, may be presented in lectures or conferences, the students being required to read the lessons before coming to conference. In no case should they be required to memorize their contents. The use of a black-board in conference, is advised.

It is further recommended that no effort be made to arrange practical instruction in connection with these early lessons of the course, except perhaps in the case of the sand table. The time available for practical instruction should be devoted to exercises in the leadership of the small units, including some outdoor work if possible.

Inasmuch as tactics includes all other subjects in the entire course of military training it is desirable that some time be devoted to a brief review of the more important subjects previously covered. These reviews should be given at their appropriate places in this course, and may take the form of questionnaires, as in the course in Musketry, and a few practical exercises.

Some of the more important subjects which it is desirable to review in connection with the course in Minor Tactics, are Scouting and Patrolling, Musketry, Technique of Infantry Weapons, and Field Engineering.

FIRST LESSON.

ORGANIZATION.

Nature and Purpose of Organization.

Organization is based on tactics and in turn influences tactics. Organization and tactics are hence mutually dependent, each on the other.

Organization in a military sense, means the composition of an army, the different arms or branches which it includes, and the units of gradually increasing size of which each branch is composed.

The purpose of organization is to make possible the effective employment of the resources of the nation, to weld its men and machines into a single great weapon in the hands of the government. In a broad sense the entire nation must be organized for war, but we are here concerned only with the organization of the actual fighting machine.

There are many who suppose that we organize an army by assembling in one place a great number of individuals and putting weapons in their hands—"a million men springing to arms over night." Such an assembly would not be an *army*, but only a *mob*. It could not be effectively employed for the simplest purpose, it could not even be held together. It would be helpless before the attack of an army having a thousandth part of its strength.

Military operations, to a greater degree than any other human activity, require concerted or co-ordinated action by a vast number of individuals. The ideal army is one in which the entire force responds to the will of a single man as effectively and smoothly as the muscles of the human body respond to the impulses of the brain. By nature or long training many of our bodily functions operate with little or no attention of the mind. We have little to do with our own digestive process. How often we even walk along the street, unconsciously note the things that are happening, stop to allow an automobile to pass, and turn off at our own corner, while our minds are entirely occupied with other thoughts. So an army, by reason of its organization and training, performs most of its functions, especially routine matters, without the personal knowledge of its commander. It is only when things go wrong that he gives personal attention to these functions, and applies remedies. The commander does not even know the men who compose the army, just as we do not know our own hearts and stomachs. We take proper care of them, and we know that we can rely on them to function properly, because they are properly organized.

Thus, an army, when not in battle, is like the body in repose, the routine functions continue in the usual manner, the brain is planning action for the future. But when the instant for action is at hand the brain rises and takes command, and sends its orders to the various muscles, giving each the part it is to perform. The brain is aware that the desired result should be obtained, because all the muscles are

organized for the use to which they are put, and each has been trained by frequent exercise. The stomach has supplied the proper nourishment, the heart has distributed it to the muscles through the arteries, the nerves will actually convey the orders of the brain to each muscle. If the body as a whole fails in its effort by reason of poor organization, lack of strength or dexterity or training, the brain orders the necessary measures to correct these deficiencies that the next effort may be more successful. It is exactly thus with the properly organized army. The commander-in-chief is the directing mind, his staff are the elements of the brain, the supply system is the stomach, the routes of travel are the arteries, the transport corps is the heart, the communication systems are the nerves, the fighting forces on the battle line are the muscles which accurately and together obey the supreme command. A mass of bones, nerves, brain and muscles thrown together do not make a body, but only a heap of useless refuse; and so a mass of men brought together do not make an army, but only a helpless mob. The analogy is quite complete.

The fundamental scheme of organization is that a small number of men are brought together and organized as a unit under a single commander, smaller units are successively combined to form larger, each unit being complete in itself under its own commander. Every small unit is part of successively larger units, and every large unit is composed of smaller units. The commander of a unit controls all the small component units, through their commanders, who are subordinate and responsible to him. And, finally, through this scheme of unit organization and hierarchy of command, we have the complete army completely under the control of one man, who is called its commander-in-chief.

Details of Organization.

The division. In all modern armies the largest permanent unit of organization is called a division. By "permanent" is meant that all the smaller units composing a division belong to it and remain with it as a rule. If detached for temporary duty they return to the division as soon as possible.

The division includes nearly all arms of the service, so that it forms a complete little army in itself. The strength of a division in different armies varies from about 10,000 to about 30,000 men. Under our present organization (based on our experiences in all wars) an American division has a strength of approximately 20,000 men.

The American division includes the following:

- Headquarters and special troops.

- Two infantry brigades, each of two regiments.

- One artillery brigade of two regiments, each of 24 light field guns.

- One combat engineer regiment.

- One medical regiment.

- Divisional trains, motor and animal drawn.

- Aeroplanes, tanks, etc.

A division is commanded by a major general, who is provided with the necessary staff of trained officers.

When acting alone, or as circumstances require, additional troops of various kinds may be attached to the division.

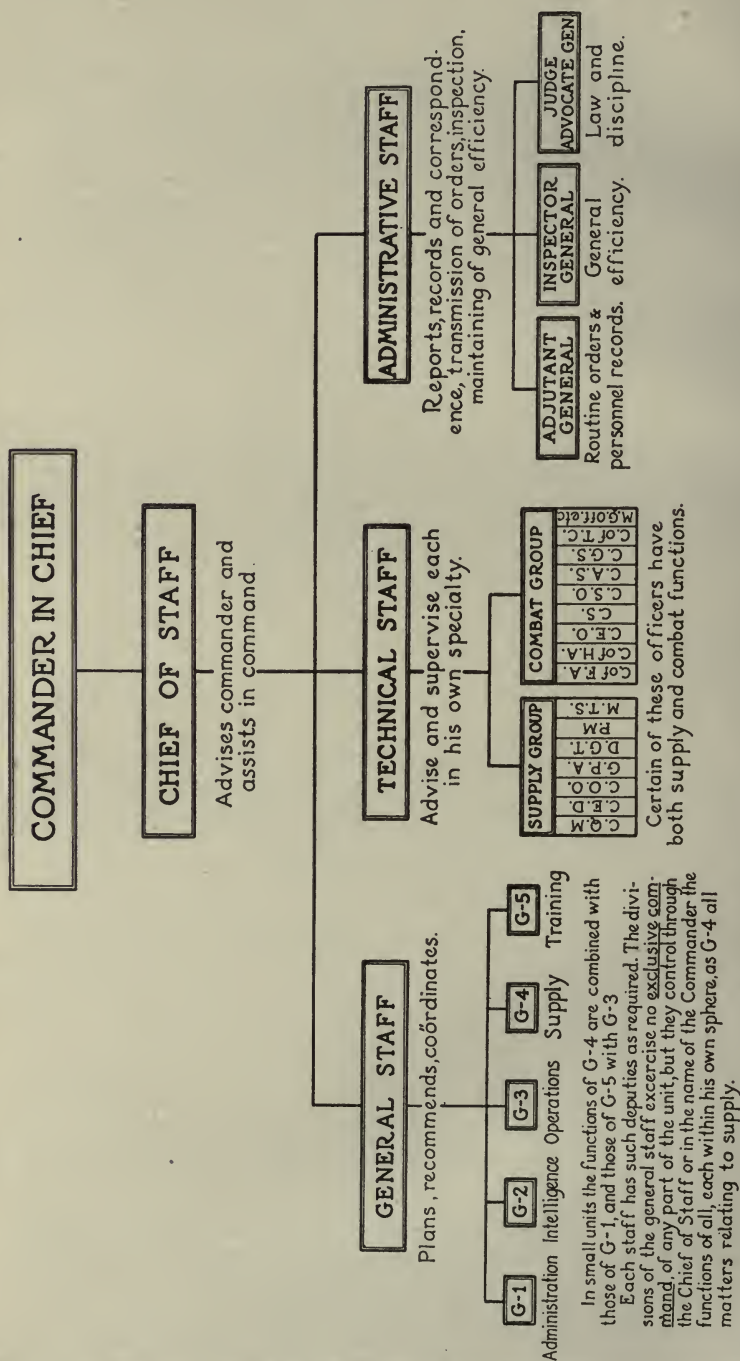
The corps. A corps consists of two or more divisions and certain corps troops, especially artillery (of greater range and power than that of the division), engineers and trains. Additional divisions and special troops are attached as necessary. Divisions are not assigned permanently to corps.

A corps is the appropriate command of a lieutenant general, having an appropriate staff.

The army. An army consists of two or more corps with certain additional troops. Like the corps it is neither fixed nor permanent in its organization.

An army is the appropriate command of a general.

STAFF RELATIONS IN MILITARY ORGANIZATION



Staff, Executive and Technical.

All units from an army to a battalion, inclusive, are provided with a staff of officers whose duties are to assist the commander in the exercise of his functions. Smaller units have an executive staff, larger units have both an executive and a technical staff. The executive staff of larger units is known as the general staff.

The executive staff in our army is organized on the "G" system, so familiar during the World War. Its duties are "functional" (pertaining to certain activities of the command as a whole, not to any particular units) and it includes a chief of staff, and four branches: 1. Personnel, 2. Intelligence, 3. Operations, 4. Supply. The actual number of officers in the staff depends on the size of the unit. The functions of this staff are primarily advisory, but it also issues orders, always in the name of the commander. Whether such orders shall be issued without being actually seen by the commander is a matter for him to decide.

Units which are large enough to have auxiliary arms and special troops included or attached (division, corps and army), have in addition to the executive staff, a technical staff composed of representatives of certain or all of such special troops (chief of artillery, chief engineer, chief surgeon, etc.). When practicable the commander of any auxiliary arm serves also as the representative of that arm on the technical staff. Thus the commander of the divisional engineer troops is also the chief engineer of the division. Where either duty requires the entire attention of one man an officer is detailed for each. Like the executive staff each department or section of the technical staff may be represented by one or more officers, according to the size of the unit. The functions of the technical staff are advisory, but each member may give orders in the name of the commander, within his own arm or service. The technical staff is subordinate to the general staff.

We will now consider in more detail the organization of the infantry units.

The regiment. The infantry regiment includes:

- 1 headquarters.
- 1 headquarters company.
- 1 service company.
- 1 howitzer company.
- 3 battalions.

Attached medical troops.

The regiment has a strength of about 3000 officers and men. It is commanded by a colonel.

The battalion. The infantry battalion includes:

- 1 headquarters.
- 1 headquarters company.
- 3 rifle companies.
- 1 machine gun company.

The battalion has a strength of about 850 officers and men. It is commanded by a lieutenant colonel or major.

The organization of the various infantry companies is given in detail in the tables in the Appendix, and discussed in the appropriate places in the text.

The foregoing is the war-strength organization. In time of peace the strength of all units is usually decreased.

Tables of organization. Tables of organization of the Infantry Division and its component units are given in Appendix A.

WEAPONS EMPLOYED IN MODERN WARFARE.

Organization and tactics based on weapons employed. Organization and battle tactics in all ages have been dependent upon the nature of the weapons employed. It will therefore be of interest briefly to consider the weapons with which the American Army is equipped.

Weapons of the Infantry Platoon.

The principal weapons of the infantry platoon are the rifle and bayonet, the automatic rifle, the rifle grenade (which is in effect a small howitzer, having a range of some 200 yards) and hand grenades. Other weapons with which the infantry is sometimes equipped include pistols, knives and daggers. These latter are rarely used and of minor importance. All the foregoing are carried on the person of the infantry soldier, one man in each squad having an automatic rifle and one a rifle grenade discharger. Grenades and rifle grenades are, in mobile warfare, used only in emergencies.

Accompanying Weapons of the Infantry.

In addition to the weapons carried by its own members the infantry rifle platoon in combat enjoys the close support of machine guns, light mortars and one pounder (or 37 mm.) cannon, and 3-inch (or 75 mm.) guns detached from the artillery to accompany the infantry in battle. The weapons mentioned in this paragraph are called the auxiliary or accompanying weapons. With the exception of the 3-inch gun they are all infantry weapons, being included with their personnel as a part of the infantry battalion or regiment. These weapons and their battle tactics are described in detail elsewhere in this course.

The principal function of these weapons is to knock out hostile machine guns which may have escaped the fire of the artillery, and are too well protected to be disposed of by the fire of rifles and automatic rifles. They are also employed to reach hostile troops in sheltered positions, and machine guns are especially valuable in covering the flanks and repelling counter attack.

The 3-inch gun of the artillery has not been a marked success as an "accompanying gun," due to its inability to get forward with the infantry. An accompanying gun is a most desirable support for the infantry attack, and it is probable that for the future a more suitable weapon for this purpose will be evolved.

The Auxiliary Arms.

The principal supporting arms of the infantry are artillery, aeroplanes and tanks. Of these the artillery is easily the most important. Increase in the range, power and intensity of artillery fire was one of the outstanding developments of the World War.

Classification and Types of Artillery.

Artillery, according to types of material, is classified as guns, howitzers, mortars and anti-aircraft artillery. Guns are characterized by high power in proportion to their weight, which results in a flat trajectory, great range and penetration. Howitzers and mortars are characterized by curved or high-angle fire, great accuracy, shorter range, less power and penetration, but heavier projectiles and greater explosive effect than guns of the same weight. They are hence able to reach and penetrate deep shelters and to fire on reverse slopes which are sheltered or defiladed from the fire of guns. Because of these characteristics they are especially useful in the destruction of defensive works and material. Each of these types of artillery are of various calibers and corresponding range and destructive power. The smaller pieces have the advantage of greater mobility, ease of ammunition supply and rapidity of fire. They are thus able to more closely accompany and support the infantry with barrage, covering and accompanying fire. The heavier pieces are used to attack hostile works beyond the range or power of the lighter pieces. Recent improvements in mounts have resulted in the increasing use of flat trajectory pieces for high-angle fire at long ranges. Anti-aircraft artillery consists of light, quick-firing pieces, mounted to allow vertical fire.

Divisional, corps and army artillery. According to the unit to which it is attached artillery is classified as divisional, corps and army artillery. In a general way it may be said that divisional artillery includes light pieces of small caliber (limited by present organization to 3-inch or 75 mm. guns, having a range of about 12,000

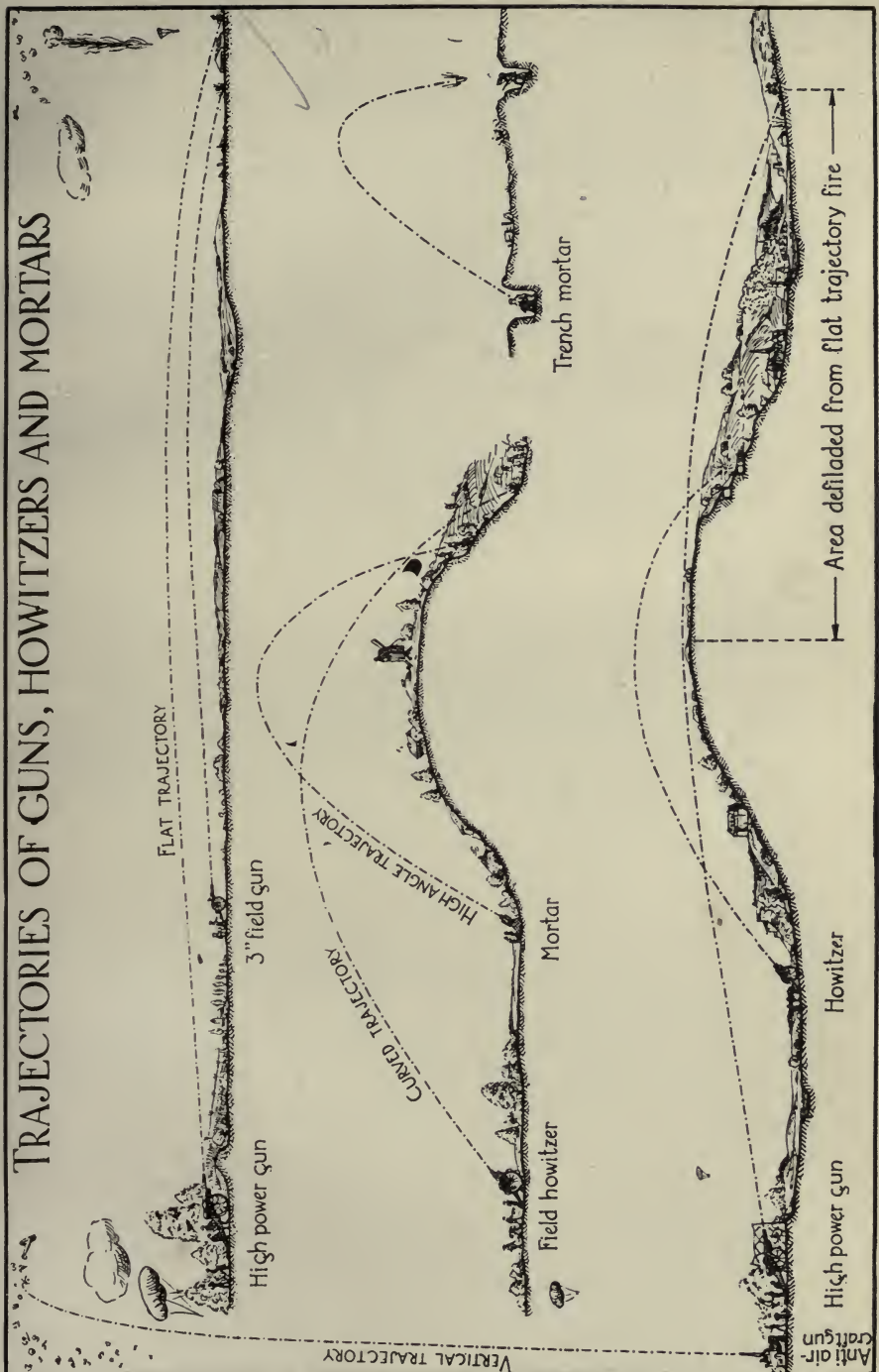


PLATE 2.

yards), corps artillery pieces of medium weight, and army artillery the heaviest pieces of greatest range and power. Army artillery also includes a reserve of light and medium pieces for the reinforcement of corps and divisions. The artillery of reserve units (not in line) is often employed to reinforce that of units actually engaged.

Missions of artillery. Divisional artillery is employed chiefly for accompanying fire, barrage in attack and defense, cutting gaps in obstacles, destroying light structures and harassing enemy troops in the forward lines, fire against fleeting targets, etc.

Corps artillery is employed primarily for counter-battery fire, or fire on the hostile artillery; it also assists in barrage, cutting gaps in obstacles, destruction of ordinary field works, fire on light structures in back areas (up to 18,000 yards), interdicting the movement of enemy troops and transport in trenches and on roads, etc.

Army artillery is employed chiefly for the destruction of solid structures, and for long-range bombardment.

Ammunition. The ammunition employed by the artillery includes shrapnel (a projectile which bursts in the air or on striking the ground, and throws out a shower of small pieces), high-explosive shell, poison gas and smoke shells. Shrapnel is effective only against personnel and is hence used chiefly for barrage, harassing, interdiction, and silencing hostile guns. High explosive is employed against both personnel and works. Gas is used only against personnel. It is employed to drench areas containing troops or through which they will pass.

Means of transportation. Artillery, according to its weight, is transported by pack mule, horse, truck or tractor drawn, and on railroad mounts. Its mobility, of course, varies inversely as its weight.

Objectives of artillery fire. Artillery fire is directed against every element of the hostile organization, and every activity of the enemy. When the lines are stabilized so that guns may be employed in large numbers and readily supplied with ammunition, when they do not have to move, and when also the locations of the hostile troops and defensive works are well known, artillery fire assumes great intensity. In mobile operations, where all these conditions are less favorable to its employment, there is a marked falling off in the accuracy and volume of artillery fire. Often the infantry must make its way entirely unsupported by its "indispensable companion."

Bombardment and barrage. While artillery fire is practically continuous along a battle front, the most important offensive operations of the artillery are the preliminary bombardment immediately preceding the infantry assault, and the rolling or jumping barrage or curtain of fire which moves forward into the hostile position, closely in front of the attacking infantry.

The purpose of the bombardment is to destroy hostile trenches, obstacles, machine gun nests, observation stations, routes of transport, etc., and to inflict losses upon and demoralize the defender's troops, thereby rendering easier the task of the attacking infantry. The opening of such a bombardment, or a marked increase in the intensity of artillery fire at any locality of course gives notice to the defender that an attack is impending, and affords him an opportunity to prepare to meet it, chiefly by bringing reserves to the threatened locality. In order therefore to secure the benefit of surprise, which is usually essential to the success of an attack, the preliminary bombardment is generally short and violent. All available artillery is secretly massed to produce the maximum effect in the minimum time. Through the intelligence service the time required for the enemy to bring up reserves will be known with tolerable accuracy. The bombardment and the attack following should therefore be timed to permit both to be successfully carried out before the enemy's reserves can effectively intervene.

The offensive barrage is a wall or curtain of fire laid upon the terrain, parallel to the front of the attacking infantry, and which advances by bounds (usually 100 yards at a time) as the infantry moves forward. Its purpose is to cause the hostile

EFFECT AGAINST PERSONNEL AND MATERIEL OF DIFFERENT CLASSES OF ARTILLERY PROJECTILES AND FUSES

FIG 1

H.E. SHELL WITH NON-DELAY PERCUSSION FUSE
(Delay not exceeding 0.01 second)

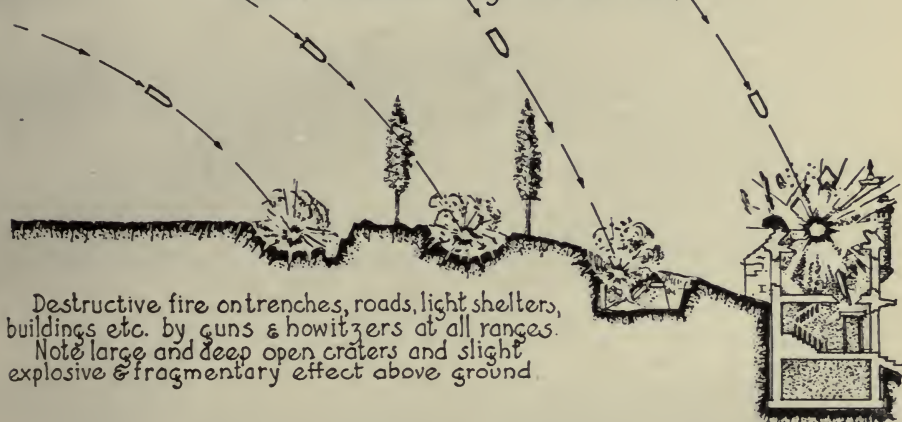
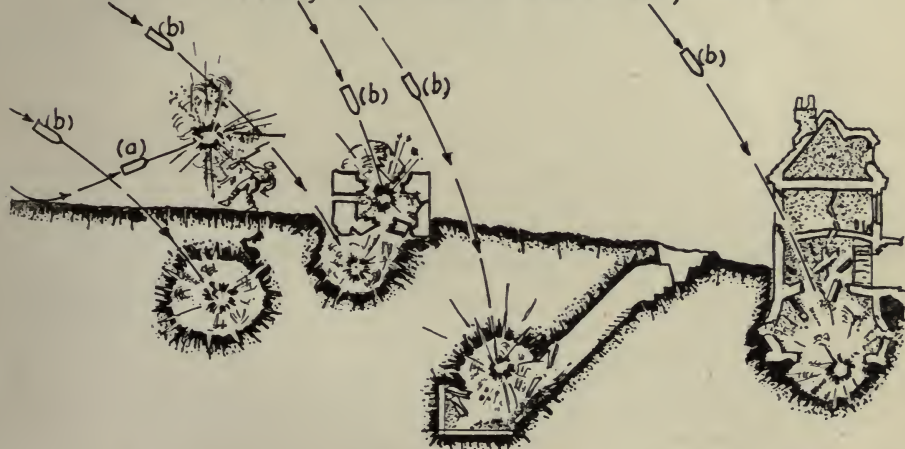


FIG. 2

H.E. SHELL WITH DELAY PERCUSSION FUSE
(Delay from 0.02 to 0.50 second)

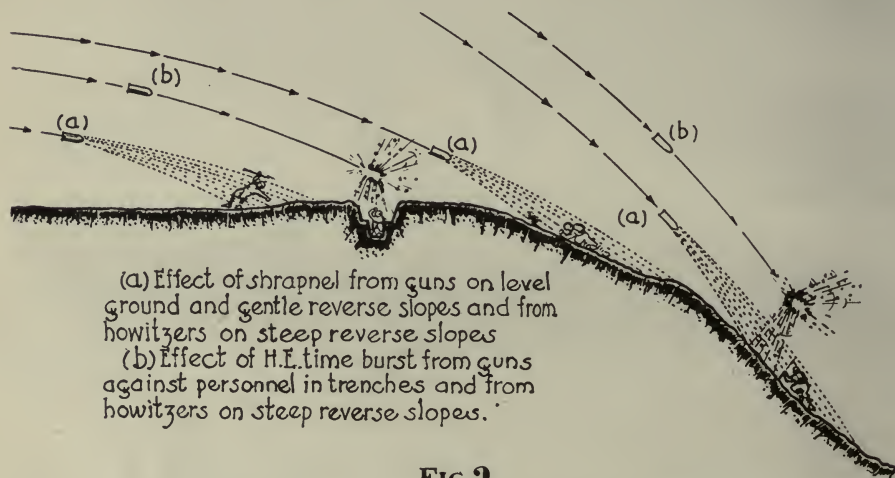


NOTE:
NOT DRAWN TO SCALE

EFFECT AGAINST PERSONNEL AND MATERIEL OF DIFFERENT CLASSES OF ARTILLERY PROJECTILES AND FUSES

FIG.1

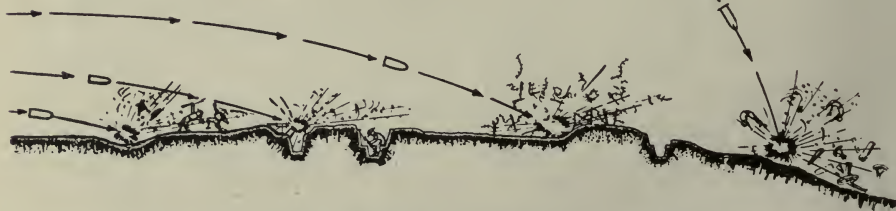
(a) BASE CHARGED SHRAPNEL WITH TIME FUSE
(b) H.E. SHELL WITH TIME FUSE



(a) Effect of shrapnel from guns on level ground and gentle reverse slopes and from howitzers on steep reverse slopes
(b) Effect of H.E. time burst from guns against personnel in trenches and from howitzers on steep reverse slopes.

FIG.2

H.E. SHELL WITH INSTANTANEOUS
PERCUSSION FUSE



Effect of H.E. instantaneous bursts from guns on personnel in the open and in trenches, and on barbed wire obstacles. Also effect of same kind of projectile from howitzers on unprotected artillery.

Note shallow depression on firm ground and powerful explosive and fragmentary effects

NOTE:
NOT DRAWN TO SCALE

troops (especially infantry and machine guns) to remain under cover in their intrenchments, whereby they are unable to fire upon and check the advance of the attacking infantry. If the barrage is very effective it may be unnecessary for the infantry to fire at all. There are four principal requirements that this jumping barrage should fulfill: (a) It should be dense enough to be really effective; (b) it should extend as far to the rear of the enemy's position as practicable, in order to cover all localities from which machine gun and rifle fire could be directed upon the attacking infantry; (c) its inner edge should be accurately aligned so that the infantry can follow it closely without suffering casualties from shells that fall "short"; (d) it should be accurately timed to keep pace with the advance of the infantry, being slower (longer interval between jumps) where the infantry progress is retarded by the nature of the terrain or obstacles.

The barrage is executed by the lighter pieces, usually 3-inch guns and the smaller howitzers, and may be reinforced or "thickened" by the fire of trench mortars and machine guns in position. As the infantry moves out to the assault the barrage guns are withdrawn from the bombardment and proceed to establish the barrage. The heavier pieces continue the bombardment, firing upon the hostile batteries and other hostile establishments outside (beyond) the zone of barrage. According to the accuracy of the barrage, the nature of the terrain and hostile defensive organization, and the training of the infantry, the latter can follow the inner edge of the barrage at a distance of about 100 to 200 yards.

It will be evident that the barrage will be both more needed and more readily employed in situations where the lines on both sides are stabilized. In more mobile operations its use will be less frequent.

Aeroplanes. The aeroplane is seldom used for the direct support of the infantry in attack or defense. Its most useful functions are taking photographs and otherwise gathering information concerning the enemy, and observing and directing the fire of the friendly artillery. Large aeroplanes are used to drop bombs on hostile establishments, usually such as are beyond effective artillery range. They operate both by day and by night. Certain aeroplanes are armed with machine guns and light cannon, and may be used intermittently for harassing hostile troops and transport on the roads. Aeroplanes often give warning of impending attacks or counter attacks, and may occasionally break up such by a sudden attack with machine guns on hostile troops massed for the purpose. In order to carry out these important missions and prevent the enemy from doing likewise, the air force endeavors to attain "control of the air" by attacking and driving off the hostile planes.

Tanks. The tank, a development of the World War, is purely an offensive weapon. It is in fact a small mobile fort or emplacement, armed with machine guns or light cannon. It is an aid to the advance of the infantry in cutting passages through obstacles, knocking out machine guns, and diverting the attention and drawing the fire of the hostile infantry. Tanks thus to a great extent fulfill the functions of the preliminary bombardment, and are sometimes used as a substitute therefor. They are proof against rifle and machine gun fire, but very vulnerable to the fire of artillery, even of smaller caliber, which they must avoid by constant moving. The tanks should accordingly be covered by the barrage. They precede the infantry attack, but if there be no barrage scouts should move in advance of the tanks to guide them and point out their objectives. The infantry conducts its attack in all respects as if no tanks were present.

Tanks attached to infantry units may perform the functions of accompanying guns. They are also usefully employed in the attack of woods and villages, in exploitation and pursuit, and even in advance guard actions. In general tanks are useful in any situation where they can be brought up to the front without the enemy's knowledge (their secret transportation is a difficult problem) where the terrain is suitable for their use, and where they enjoy a reasonable degree of immunity from hostile artillery fire.

ARTILLERY ROLLING BARRAGE IN ATTACK

GRAPHIC TIME TABLE SHOWING TIMES AT WHICH 3" GUN BARRAGE
LIFTS FROM LINES INDICATED

NOTE: The tracing (on translucent paper) is super-posed on map

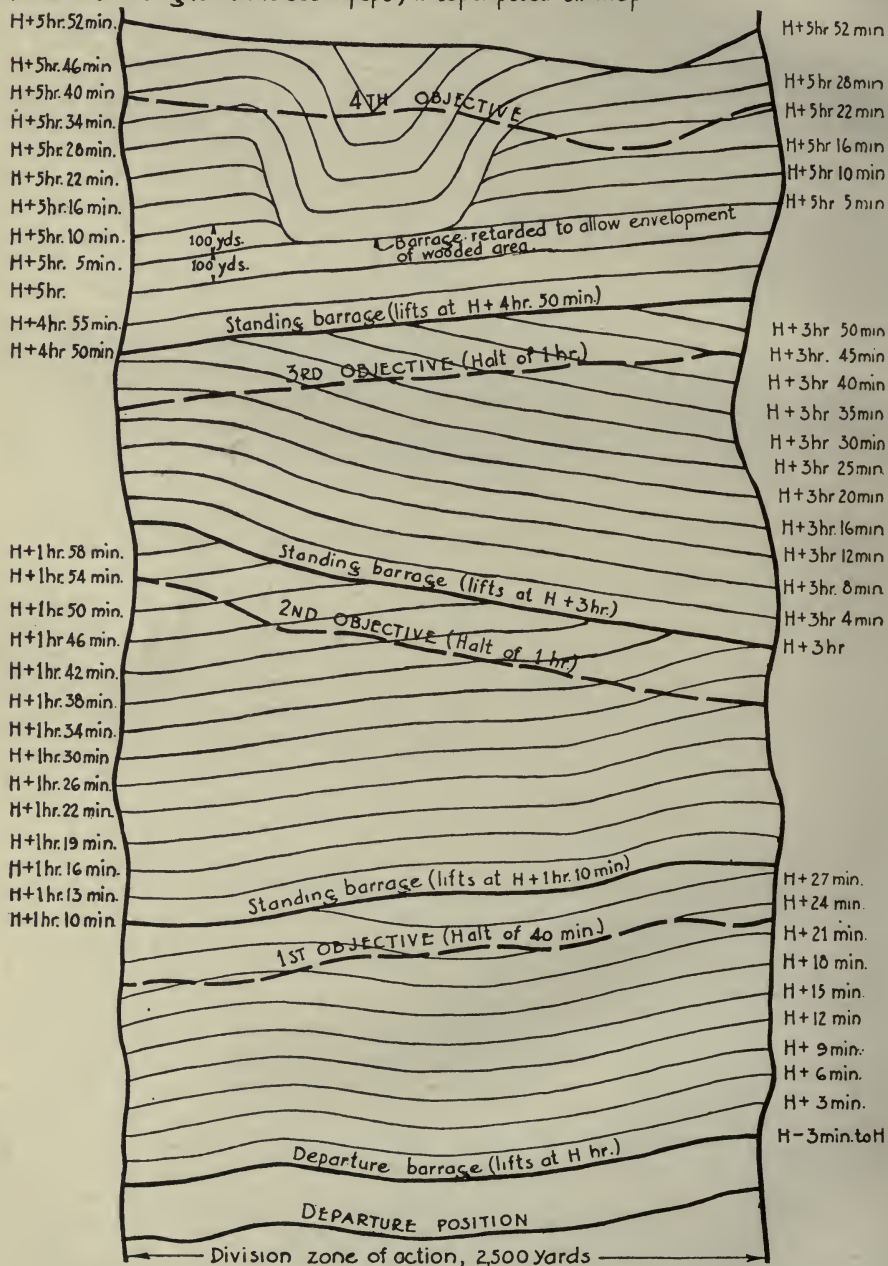


PLATE 5.

TACTICAL EMPLOYMENT OF LIGHT TANKS

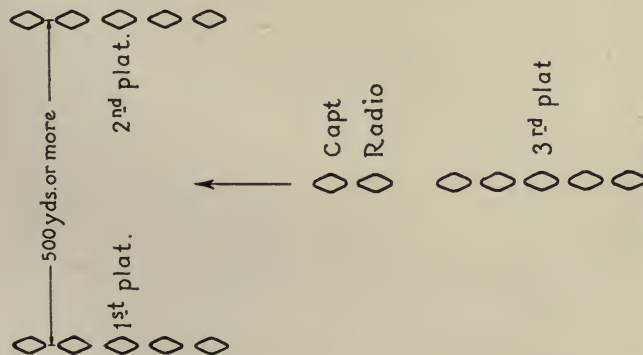


FIG.1
COMPANY IN APPROACH
FORMATION

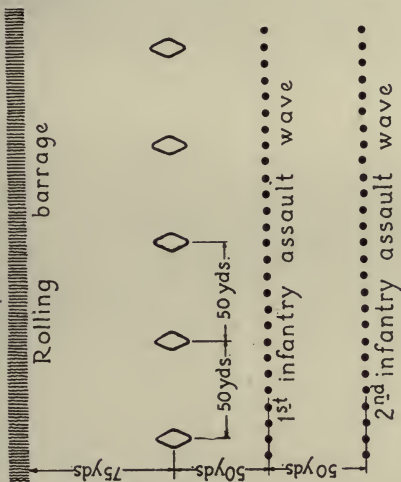


FIG.2
PLATOON OF LIGHT TANKS
AND INFANTRY
IN ASSAULT OF A POSITION
WITH BARRAGE



FIG.3
PLATOON OF LIGHT TANKS
ATTACKING A VILLAGE

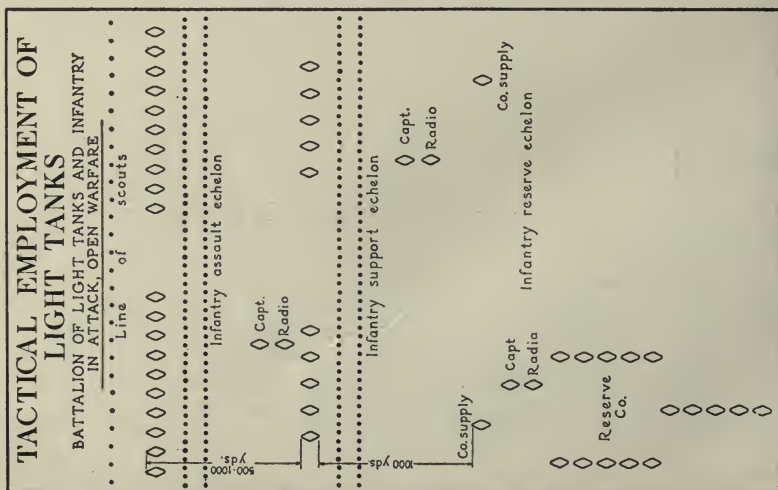


PLATE 7.

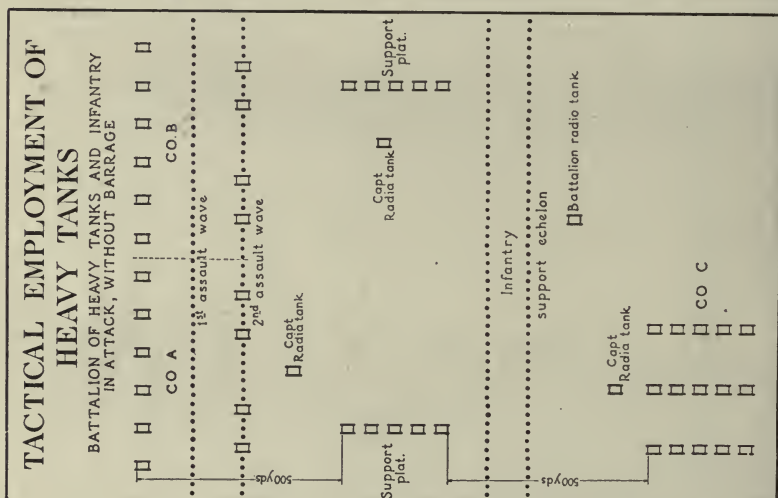


PLATE 8.

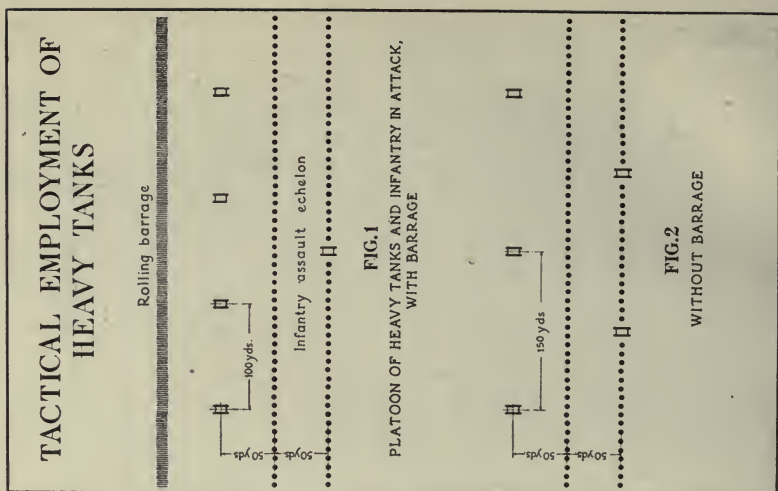


PLATE 9.

Mobility of weapons. It will be noted that all weapons employed in modern war have the characteristic of mobility. The majority of them are in almost continuous motion throughout the course of the combat. The heavier weapons move forward by "bounds" from one selected position to another as the attack progresses.

SECOND LESSON.

GENERAL PROCEDURE OF BATTLE.

In order to better appreciate the functions of the small infantry units in combat, it will be well at this point to take a bird's-eye view of the progress of the battle as a whole.

Every combat, whether on a large scale or a small scale, consists in the attack and defense of a *position*. When two small opposing forces meet on the march one of them assumes a position which the other attacks. The position in this case will be a piece of terrain in its natural state, there being no time to improve or strengthen it artificially. The defender utilizes the natural advantages of the terrain in which he finds himself. On the other hand when the opposing forces have been in contact for a long period each will have strengthened its position by the construction of elaborate works of field fortification, including trenches, observation posts, obstacles and other devices. The first situation is what is commonly called "open warfare," whereas the second is known as "stabilized warfare." There is no sharp line of demarcation between the two. In any case the defender will strengthen his position to the extent that time and facilities permit, or to the extent that he considers necessary.

If the defender's line be a continuous one extending along the entire frontier, as was the case in the World War, the attacker selects the portion of the line which he wishes to attack and, secretly if possible, masses his resources of men and material opposite the point of attack. If, on the other hand, the theater of war is of great size and the number of combatants relatively small, the conflict consists of a series of battles between relatively small forces. Such has been the aspect of all wars to date on the American continent, and the majority of them in other lands. The procedure in this case is known as "detachment warfare." The defender occupies a position of limited extent, whose ends are called its flanks. The attacker assaults the entire position. He will usually obtain better results if he assails the position in front and on one or both flanks simultaneously. This is known as the enveloping attack, hereinafter described in detail.

The combatant who wishes to evade or postpone a decision often seeks to "stabilize" the conflict. The aggressor seeks to destroy the stabilization and bring on open warfare, which affords him greater opportunity to inflict damage on a weaker opponent.

In any of the situations described the procedure of battle consists of the apparently simple process of the infantry of one side advancing and occupying territory formerly held by the other. It might appear that the mere occupation of ground would hardly constitute "victory." Yet actually such is the case. If the defender remains to dispute the ground, and is unable to check the advance of the hostile infantry, he suffers heavy losses in killed, wounded and captured men, equipment and supplies. This, if continued, must ultimately break down the defender's power of resistance. If, on the other hand, he withdraws before the hostile advance, he still suffers great losses and demoralization from his enemy's fire; he is forced back at greater or less speed until he reaches a point where he must either demonstrate his ability to prevent a further advance of his opponent, or else have his own territory invaded and gradually lose the resources necessary to a continuance of the struggle. Thus victory consists in the seizure of territory formerly held by the enemy, and the size and importance of the area thus seized is usually a fair measure of the importance of the victory. Nevertheless the occupation of territory is not in itself the aim of the attacker, and in a thinly populated agricultural district may have no special significance. His real purpose is to inflict on the organized forces of the enemy such damage as to ultimately destroy their fighting power and compel

them to give up the conflict. Accordingly, the hostile army is the real objective, and the occupation of territory is incidental. To conserve the fighting power of his forces will usually be of more importance to a combatant than the retention of territory, and the latter may be abandoned rather than to bring on a defeat. Nevertheless the continued surrender of territory must, as has been pointed out, ultimately end in defeat.

An attack against a well-fortified front requires a considerable preponderance of strength. The attacker can seldom have such an advantage along his entire frontier. He therefore selects for attack a certain locality where he is most likely to succeed or where success will give the most important results. The attacker then masses his forces at the locality selected by using his reserves and withdrawing troops from other portions of the front. The element of surprise is very important, since if the defender knew of the impending attack he could in his turn mass his resources at the threatened locality. Accordingly, the troops and equipment are assembled secretly; movements being made by night, and the troops hidden in the woods and towns by day. Every precaution is taken to conceal all activities that might betray the attacker's intentions.

The attacker having assembled his troops, machine guns, artillery, tanks, aeroplanes and supplies of all kinds at the selected locality, is now ready to deliver his attack; in other words, to have his infantry go forward and occupy the ground held by the defender. But the defender's lines consist of infantry armed with the rifle and sheltered by trenches, supported by machine guns, some of them in covered emplacements. Also, as the attacker's infantry moves forward the defender's artillery will lay down a protective barrage or curtain of exploding shells through which the attacker must pass. It is utterly impossible for attacking infantry to advance in the open against *unrestricted* fire by the weapons of the defense, especially as it must usually pass through obstacles on its way. Accordingly, the attacker employs all his weapons to restrict the fire of the defense to such an extent that the attacking infantry can advance without suffering ruinous losses. The attack is thus a combination of *fire* and *movement*.

The means of restricting the fire of the defense are the preliminary bombardment and jumping barrage of the artillery. The purposes of this fire are seldom fully accomplished, but to the extent that artillery support is effective the task of the infantry is made easy. If artillery support is lacking, the infantry of the attack must restrict the defender's fire and establish "fire superiority" by its own weapons alone. If it is unable to do so the attack comes to a standstill. If the defender's position is well organized, if his troops are good and he is well supplied with artillery, machine guns and other weapons, an attack against him will be doomed to failure unless supported by artillery. If the defender is weak in any of these respects the attacking infantry may need little or no artillery support.

The defender's artillery, prior to the attack, endeavors to demoralize the preparations by firing on the hostile artillery, on the known or supposed localities of the hostile infantry, and on the routes by which it must move forward. The defender mans his trenches with additional infantry and disposes his reserves at suitable localities to oppose the attack.

However great the attacker's fire, it has been found impossible as a rule to "shoot the enemy out of his position." Victory must be clinched by the advance of the infantry. Accordingly, immediately upon the conclusion of the preliminary bombardment the attacking infantry "jumps off" and, covered by the jumping barrage and if necessary the fire of its own weapons, it advances against the defender. The advance is made in a number of waves or lines of skirmishers, the waves and skirmishers being separated by wide distances and intervals, to reduce the effects of the defender's fire. These waves advance continuously if possible, otherwise by rushes of alternate parts of the line. The defender opposes the advance with the fire of all his weapons.

If the advance is successful the attacking infantry enters the defender's terrain, and kills, captures or drives out the troops therein. At this juncture the defender

usually adopts more active measures and launches an attack of his own (called a counter attack), utilizing his supports and reserves. Counter attacks are executed both on a small and a large scale. They may be supported by artillery, and in any case utilize fire and movement as in attack. If delivered suddenly by surprise and in force against the hostile infantry in the open, and especially if they can strike it in flank, counter attacks may be successful in checking the advance, even in forcing it back and reversing the general situation. Counter attacks in flank may be possible if portions of the assailant's forces have advanced far beyond their neighbors on either side, thus exposing their flanks. These counter attacks are characteristic of what is called an active defense.

The combat seldom proceeds with machine-like regularity. The resistance will seldom be uniform along the entire front. At some localities the attack may proceed with little difficulty. At others it may be checked or delayed by strong local resistance. The attacking infantry will then have recourse to its own rifle fire and the fire of its accompanying weapons in overcoming such resistance. Additional troops are sent forward to reinforce the attacking waves. The attacking infantry, taking advantage of any shelter afforded by the ground, endeavors to envelop or surround the areas from which the hostile resistance comes, thus bringing converging or concentric fire upon them. When this local resistance is overcome the attacking infantry resumes its advance. As the leading waves of infantry become exhausted or decimated by fire, fresh troops from the reserves are brought up to carry on the forward movement.

The attack, which is a combination of fire and forward movement, is continued as long as possible. If it succeeds in "breaking through" the organized defense, and especially if it overruns the defender's artillery positions in rear of his lines of trenches, it may force him to retreat in disorder. In this case the defender's fire ceases to be effective, and the attacking infantry is able to advance with great rapidity, encountering little or no resistance. It is at such a time that the greatest opportunity is afforded to inflict damage on the defender, and the attack should be exploited or pushed with all possible vigor, fresh troops being employed.

Eventually, however, the forward movement is brought to a halt, at least temporarily, by one or more circumstances. The defender's resistance may increase as the attack progresses, due to his bringing up reserves of infantry and artillery. Also in a rapid advance the attacking infantry will eventually go beyond the range of its supporting artillery. If at this time the defender's resistance is so strong that artillery support is necessary for a further advance, the infantry must halt until the guns can be brought forward. The supply of food and ammunition also becomes increasingly difficult as the advance continues, and a halt will eventually be necessary while shell-torn roads are repaired so that the artillery and trucks carrying supplies and ammunition may come forward. The defender, if driven from his advanced position, will often have another prepared position in rear, occupied by fresh reserves. This position will be intact, as it has not been subjected to bombardment, and may offer a stronger resistance than the one in front.

A too rapid and long-continued advance of the attacker's infantry, beyond the range of its supporting artillery, invites disaster in the form of a counter attack by the defender, unless the latter is very weak and inactive. Accordingly, the attacker usually decides in advance of his attack, the extreme limit to which it will probably be practicable and safe for his infantry to go. This position is called an "objective" and its capture completes a "phase" of the attack. Upon reaching this limit, circumstances, especially the nature of the defender's resistance, will decide whether the advance may be at once continued. If not, a halt is made, during which preparations for the next phase of the attack are completed. These preparations will include repairing roads, bringing up the reserves, artillery and supplies, and organizing the bombardment, barrage and covering fire for the next advance.

The halt on any objective and the consequent lull in the action usually give the defender opportunity to organize a counter attack in force—an opportunity of which he may be expected to take full advantage. Accordingly, the first duty of the attack-

ing infantry upon halting on any objective, is to "dig in" or intrench and hold the ground it has won.

An attack on a large scale against an enemy well intrenched may involve months of preparation, during which the opposing forces remain in position facing each other, and the front is what is known as "quiet." The usual activities on a "quiet" front include more or less continuous artillery and machine gun fire, "sniping," raids and small attacks, and activity in the air, each combatant endeavoring to find out what the other is doing or intends to do. During these periods of relative calm each side builds elaborate trenches and shelters along the front, and prepares other fortified lines in rear to which it may retreat if driven out of the forward position. The great strength and resisting power of these fortified positions is the cause of the "trench deadlocks" so characteristic of the World War, in which the battle lines often remained in practically the same positions for months and even years at a time.

The attack on such a position is made with almost machine-like precision in accordance with a very definite schedule, and great reliance is placed on a heavy fire of artillery. When the defender has been forced out of his prepared position into open and unfortified terrain, there is a marked change in the nature of the operations, and events follow each other with greater rapidity. Because of the difficulty of bringing up the artillery and its ammunition, and the fact that the ground and the enemy's positions are not so well known, there will be a considerable falling off in the intensity of artillery fire. The infantry will maneuver with greater rapidity and depend more on the fire of its own weapons in overcoming the enemy's resistance. The continuity of the front may be destroyed, there will be combats between relatively small forces at various localities, and opportunities for attack and counter attack against the enemy's flanks. This continues until the aggressive combatant has advanced so far that he is compelled to halt until he can reorganize his system of supply. Both sides then resort again to elaborate intrenchment, and another period of calm and "stabilization" may ensue.

The phase of combat commonly known as "open warfare" as compared with attacks against stabilized positions, is thus characterized by less elaborate field works, less intensive artillery fire, especially of the larger calibers, more reliance on the fire of the infantry and its accompanying weapons, more opportunity for maneuver, envelopment and flank attack, more room for the exercise of initiative by subordinate commanders. Such situations make the greatest demands upon the infantry, and on such its organization, training and equipment should properly be based.

However highly fortified the front, it cannot resist a strong attack unless properly manned with infantry and artillery and the accessory arms. It is impossible for any combatant to maintain at every point along his entire frontier sufficient troops to either make or resist a powerful attack, and it is this fact which lends interest and variety to the game. Actually the fortified fronts are as a rule rather lightly held, a large part of the available troops being in reserve at convenient localities in rear. These reserves are moved about by rail, motor truck or marching, and massed at the localities where attacks are to be delivered or met. Regardless of the relative strength of the forces as a whole, victory at any point will be with the combatant who can most rapidly mass his reserves at that point. Therefore the elements of *secrecy, surprise and rapidity in transportation* of troops and supplies, are of the utmost importance to both the attack and the defense. It will be abundantly evident that passive measures alone will never attain decisive results. The greater the reserves at the disposal of a commander, the better his transportation facilities, the more accurate his information respecting the enemy's dispositions and the greater the secrecy with which he guards his own—the more readily he effects the concentrations of superior strength at critical points which are the evident means of victory.

In this combat the small infantry units are the principal performers. Each has a definite task—to advance to a designated objective, clearing away or overcoming all resistance, and to organize and hold the captured ground. To establish and

maintain fire superiority, to push resolutely and continually forward at all costs, to envelop and break down all resistance, to co-operate with its neighbors on either flank, to get home with the bayonet, to cling tenaciously to all gains—such is the mission of the infantry in the attack.

THIRD LESSON.

THE APPLICATORY SYSTEM OF TACTICAL INSTRUCTION.

Need of Practical Instruction in the Art of War.

It is human nature to be embarrassed and confused when one is called upon to assume an unfamiliar rôle, to do something for which he is not trained. The millionaire captain of industry would be utterly confused if suddenly called upon to shoe a mule. A successful banker would be a spectacle as a catcher at a baseball game. The average private citizen would be completely at a loss if required to prepare the orders for the march of a battalion. He might be a deep student of military history, familiar with all the decisive battles of the world and the reasons for their outcome, yet he would not know how to begin the preparation of a field order.

It is only by continued practical training, by constantly doing things, that we can replace the embarrassment and helplessness of ignorance by confidence and ability. Troop leading is simple and easy to one who knows how as a result of practice—it is impossible to one who does not know how. And in war, as the British say: "If you don't know how you get killed."

The untrained man is deprived of his powers of thought and decision when confronted with an unfamiliar situation.

The trained man meets a familiar situation with ease and confidence.

The School of War Not Sufficient.

Warfare is an intensely practical art, and the ability to lead troops in battle cannot be acquired by a mere study of principles however sound and good, nor by perusal of the lessons of history. Practical experience and lots of it, is absolutely essential.

In the practical arts of peace the student may acquire proficiency by serving an apprenticeship, or taking a course of practical instruction.

It is natural to suppose that the actual experiences of warfare constitute the best school of tactical training. Certainly the value of such real experience is not to be denied, yet as a training school war itself falls far short of meeting the requirements. The apprentice learns by his mistakes, and we cannot afford mistakes in time of war—they are too costly of blood and treasure. If we are to be successful, if we are to prosecute the war efficiently and economically, we must enter it with troops and leaders already fully trained. Moreover wars are too infrequent (happily) to be depended upon as a school of training. If a reasonable period of peace intervenes between wars the leaders, or certainly the junior leaders of one war will seldom be those having experience of a previous conflict. And then, too, war is not conducted as a training school, but for quite different purposes. The experiences of any one individual are very apt to be fragmentary and narrow, and highly incomplete and unsatisfactory, unless they serve to enrich previously acquired knowledge and training. The leader who waits until war is upon him to acquire his training and experience will surely bring disaster upon himself, the troops under his command, and the nation which looks to him for results.

Probably no further argument is required as to the necessity of training our leaders in time of peace—thus observing the wise maxim of the father of our country, "In time of peace prepare for war."

Schools of the art of war. There have been two radical schools in the art of war. One has sought to reduce warfare to an exact science by establishing "rules of thumb" and "normal formations" to cover all cases. The other school, believing that there can be no such thing as a normal formation and that everything "depends

upon circumstances," have contented themselves with a mere statement of abstract principles, and have carefully refrained from giving any examples or figures, lest these be regarded by the reader as patterns or models to be slavishly followed.

It is now generally recognized that the golden mean lies somewhere between these two undesirable extremes. The combatant who follows any set methods of procedure will certainly come to grief when opposed to a more resourceful and adaptable enemy. Every situation in warfare is unique. Yet we do have normal formations for certain maneuvers which are prescribed in our drill regulations. We do have standard commands and signals which should be used whenever possible. Rules of thumb are dangerous when used by men who have no knowledge of the principles on which they are based. On the other hand abstract principles mean little to the mind of the average man. They must be "visualized" by application to concrete cases. The correct application will vary within certain limits, and these limits expand with the size of the unit. The correct application requires first a knowledge of the usual limits of "good practice" in tactics, and second sound common sense and judgment. These can be developed only by practical experience, by the repeated solution of practical problems and the continued application of well-known principles to various situations.

Warfare is in a manner comparable to a game, especially a football game. No two plays in the game ever develop in exactly the same way. No individual ever does exactly the same thing twice. The quarterback varies his plays according to the situation as he sees it. Yet the game is played according to rules, there are certain definite principles of attack and defense which are recognized as good practice, and the players are trained in accordance with a system. They play as they have been taught, and observe the rules, but they use their heads in doing so. It is exactly thus with the greater game of war.

How then shall tactics be taught?

1. By a study of experience and precedent, whereby the principles of good practice are deduced from the failures and successes which history records.
2. By constant practice in the application of these principles to our conduct in assumed concrete cases.

To accomplish its purpose practical training in time of peace must be *realistic*. The conditions of actual warfare must be simulated as closely as possible. This has been accomplished in what is known as the *applicatory system*, which is now in vogue in the armies of all civilized nations.

The Applicatory System Defined.

In brief the applicatory system includes a theoretical study of the principles of the art of war, based upon past experiences, followed by practical exercises in which these principles are applied to assumed cases or "situations." The practical exercises should properly first take the form of illustrative examples and demonstrations, and finally of practical problems, analogous to problems in arithmetic or algebra, in which the full responsibility for the solution is placed upon the shoulders of the student. In one important particular these problems differ from those of arithmetic. There is always more than one, and there may be many correct solutions. It is manifestly impossible that two different personalities should ever hit upon exactly the same line of procedure in any given situation. Any procedure which will accomplish the desired result without undue waste of time, effort and life, is acceptable—even though it differs markedly from some other line of procedure which also achieves the result. Each solution reflects the nature or character of its author. It will be found, however, that the better the training of the students, the less will be the variation in their solutions and the closer they will approach the ideal. When the class has been properly and thoroughly trained their solutions of the relatively simple problems which will be presented to subordinate leaders, will be very closely in accord, and sound. A test of the efficiency of tactical training is thus easily made.

Common Forms of Tactical Exercises.

Let us now consider briefly the various forms of practical exercises employed in the applicatory system.

Illustrative example. This is the simplest form of concrete illustration of a tactical principle. For example: Infantry is advancing down a slope on which shells are falling. What formation would be appropriate?

Demonstration. The solution to a simple tactical problem is actually staged, visualized or demonstrated in the presence of the students. The demonstration may be given on a sand table or map, using pins, matches, etc., to indicate troops. Or it may be given on the actual terrain by troops especially trained for the purpose. Both methods should be used. Sometimes both a correct and an incorrect procedure may be demonstrated, in order to emphasize mistakes. The instructor explains each phase, and calls attention to the details. The enemy is usually either imaginary or merely outlined. On the terrain he may be represented by silhouette targets, or occasionally by a few troops. (See Musketry.) Because of the difficulty of seeing and grasping all the details of a large and intricate maneuver, demonstrations (in this course at least) should usually be limited to simple situations involving units from a squad to a platoon, inclusive.

Tactical walk (or ride). In this exercise the instructor conducts his students to one or more points selected on a suitable terrain. Here he outlines a problem or situation, which may be given verbally or by means of copies distributed to the students. The troops, both friendly and hostile, involved in the problem, are imaginary. The instructor then gives the solution, visualizing it on the terrain. In order to stimulate the interest and command the attention of the students, the instructor will ask questions and call upon various members of the class to state their solutions of the problems of various commanders in various phases of the situation. These solutions are discussed and errors pointed out by the instructor. Complete written solutions are not called for.

Map (or sand table) maneuver. This exercise is similar to the tactical walk, except that it is conducted indoors on a topographical or relief map, or on the sand table. Troops may be represented by pins, etc.

It will be noted that in the foregoing exercises the responsibility for the solution of the problems involved is not placed squarely upon the shoulders of the student. They are intended primarily to enable the instructor to visualize the application of certain recognized principles to concrete cases, and should be prepared with this purpose in mind. But the most valuable result of a proper course of military training, from either a military or civil point of view, is the development in the student of initiative, resourcefulness and a sense of responsibility—in brief the essentials of leadership. In the following types of tactical exercises the responsibility for the solution of the problems presented is placed entirely upon the student.

Terrain exercise. This bears the same relation to a tactical walk that a written recitation or examination bears to a lecture. The instructor conducts his students to the selected terrain and issues to each a written statement of the problem. The students are then required, each independently, to write out their solutions.

Map (or sand table) problem. This exercise is similar to the foregoing, except that it is conducted indoors on a topographical or relief map, or on the sand table. Each student independently prepares a written solution.

War game. In this exercise a tactical problem is played out on a map, relief map or sand table, as a game. The game may be one sided or two sided, the latter introducing the desirable element of competition.

A large scale map, usually 12 inches = 1 mile, known as a war game map, is used, or an equal or greater scale on the sand table.

In the one-sided game the instructor, acting as director (or umpire), issues the problem, either orally or preferably in written form. The students participating

are then assigned to command of the various units involved, or to duties therein. For example, one student will command the friendly troops as a whole, one will command the advance guard, one the point, two or more may act as scouts, etc. The director, from time to time, gives such information of the enemy as would be known to the friendly forces, or as the commander might obtain by proper reconnaissance. He imposes the necessary limitations and penalties or losses. The solutions of the students are usually given verbally, and may be commented upon by the director, so far as necessary. Where orders are to be given the director may require that these be submitted to him in writing.

In the two-sided game, which is the more interesting form, the opposing sides (Blue and Red or other colors) are designated by the director, or sides may be "chosen" as for a game. The two opposing sides are assigned to various duties in their respective commands, and solve their problems as before. They are alternately admitted to the room containing the map or sand table, or two map rooms and duplicate maps may be provided. If it be necessary to place pins to indicate the positions of troops on either side, these should be removed before the entry of the other side. The director gives to each side such information as he judges they would have in the actual case, imposes limitations and penalties, and generally controls the progress of the game.

Situations for a war game should be so drawn as to create interest and competition. The tasks of the opposing forces should generally be made equal, and contact and combat between them should be provided for. For example, two opposing forces of equal strength may each be given the mission of advancing to and seizing the town occupied by the other. A serious mistake by either side may result in the other winning the game.

Maneuver. This is the most elaborate form of tactical exercise. It consists of a problem, solved on the terrain with actual troops, and like the war game may be either one or two sided. It simulates the conditions of warfare more closely than any other form of instruction, but has also certain disadvantages which are to be guarded against.

Maneuvers may be conducted on a very large scale. This is necessary for the instruction of higher commanders, but for non-commissioned officers and junior officers the small scale maneuver is to be preferred.

The students are assigned to commands as described for the war game, and the maneuver is regulated and controlled by experienced officers acting as umpires.

Maneuvers, especially those on a large scale, have the following disadvantages: They require a suitable terrain, usually of considerable size, and observance of property rights often detracts greatly from realism; they require much time and effort to organize and initiate, troops must be available, and the item of expense may be large; situations develop slowly (as compared with indoor exercises) and much time is consumed in proportion to the instruction imparted; because of the number of individuals involved and the extent to which they are scattered over the terrain the maneuver is difficult to control and there is very apt to be confusion and waste of time; there is a great probability that the majority of those participating will derive comparatively little instruction from the exercise.

In spite of these disadvantages, however, the outdoor maneuver if skillfully conducted, is a most valuable form of training, which should be had when conditions are favorable, but it is fortunate that we are not dependent solely upon it as a means of practical military instruction.

Maneuvers should be of a size proportionate to the rank or prospective rank of those being instructed. For example, in the instruction of prospective platoon leaders the maneuvers should be limited to platoon and company. Divisional maneuvers are of value to division and brigade commanders, but they are not especially profitable to the great majority of junior officers and non-commissioned officers involved. In an advance guard maneuver practically all the action will take place in the point and advance party. Accordingly, the larger bodies in rear may well be imaginary or outlined only. If ample troops be available it will be better to

have several small maneuvers where everybody has something to do, rather than one large one where the majority merely wait around or march without incident from one place to another.

As a final caution it may be observed that maneuvers on a large or medium scale will usually be a waste of time unless those participating have been previously well instructed by means of other forms of exercise.

Each of the foregoing tactical exercises has its special field and advantages. Responsibility should not be placed upon the student until the methods of good practice have been shown him. Accordingly, the demonstration, tactical walk and map maneuver should precede the other forms of instruction. The war game may be used to vary the monotony of the map problem.

Indoor exercises have many manifest advantages, and are the most commonly employed. They are easily carried out; require no special terrain and no troublesome preparations; they may be conducted in any season or weather; they are easily controlled; the situation as a whole is easily seen and comprehended; a greater variety of instruction is practicable; and the maximum of instruction can be given in the minimum of time.

Outdoor exercises, especially with troops, simulate the conditions of actual warfare; they furnish variety; and are, for young men at least, usually more enjoyable than exercises indoors.

In any course of instruction, accordingly, these various forms of exercises should all be employed to the extent that time and facilities permit.

Structure of Tactical Problems.

Each of the tactical exercises hereinbefore described is capable of considerable variation. They should be and are usually presented in the form of a problem calling for a solution in more or less detail. The problem opens with a statement of certain imaginary conditions, constituting what is called "the situation." Usually the situation is divided into two parts, known as the "general situation" and the "special situation."

The general situation sets forth the general conditions in the theater of war as a whole, and is presumed to be known to both sides. Ordinarily it relates that the Blues (our own forces) and the Reds (the enemy) are at war, or have been at war since a certain date, and defines the boundary line between the hostile states. The strength and locations of the opposing forces, their respective states of mobilization, training, etc., may be given. Certain important past events of the war may be related, as that the Reds were defeated in a battle on such date, and are now retreating before the advance of the Blues, etc. The apparent intentions of one or both sides, so far as these might be judged from their known actions, may also be stated. Finally, certain details as to weather, season, important extraneous matters, such as possible intervention of allies, etc., may be given.

The special situation sets forth in some detail the (imaginary) circumstances surrounding some particular body of troops, of which the student is presumed to be the commander or one of the subordinate commanders. These will usually include:

1. Date and hour at which the situation opens.
2. Strength, composition, location and distribution of the command.
3. Detailed information concerning the enemy, to any assumed degree.
4. Strength and location of friendly troops in the vicinity.
5. Orders and messages received.
6. Detailed information concerning the terrain and other special conditions, to any assumed degree.

The problem then concludes with certain "requirements" which are demanded of the student, these constituting the "solution" of the problem. A complete solution includes:

1. The commander's (or leader's) "estimate of the situation."
2. His "decision," or intentions, expressed in a few words as, "to advance to X."

3. His definite plan of action, based on the decision. This plan should be in such detail that a competent staff officer or subordinate could prepare the necessary orders, therefrom.

4. His orders, either written or verbal, exactly as they would be given to his command.

5. Any messages sent by the commander.

6. Any actions taken by the commander in addition to the above, such as ordering reconnaissance, conferences with subordinates, personal investigations, etc.

Often the requirements do not call for all the items above stated. For example, the requirement may be, "the commander's decision with a brief statement of the reasons for the action taken," etc. In this case the complete "estimate of the situation" would be omitted from the written solution.

Problems calling for a decision as to a particular line of action are known as "problems of decision." Sometimes the decision or plan of action is given in the problem and the student is required to give his orders and actions to carry out the stated plan. Such a problem is called a "troop leading" problem. Often both decision and troop leading are required in the same problem.

A common form is the "continuing problem" in which a number of successive situations in the same action or maneuver, are presented for solution.

Critiques and conferences. At the close of every tactical exercise there should be a critique or conference between the instructor and his students, in which the former emphasizes the lessons to be learned, indicates the mistakes made, and answers questions.

In critiques or conferences, in the conduct of a tactical walk or war game, the instructor should adopt a helpful and encouraging attitude, avoiding harsh criticism and sarcasm. In the absence of plain indications to the contrary it is to be assumed that the students are anxious to learn and are doing their best. They should be given every encouragement and good work should be commended. Mistakes should be plainly pointed out, but this should be done in a tactful manner without giving offense.

"Approved" solutions. In the case of written problems the instructor grades the solutions and comments upon them for the benefit of his students. It is the custom also for the instructor to issue "an approved solution" of his own. It should be impressed upon the students that this is not the only correct solution, and that a very different one might accomplish the result. Sometimes the instructor will not complete his own solution until he has reviewed those of his students. If the problem be a simple one and the solutions generally close to the mark, a few comments on the most serious mistakes observed may be sufficient, or a few of the best solutions submitted by the students may be posted for the benefit of all. This has a stimulating effect. Also students may be required to review the solutions of others.

The following method of instruction also tends to stimulate the interest of the students. All students having handed in their written solutions, the instructor issues a solution prepared by himself. Each student is then required to write a short criticism, taking the form of a comparison between his (the student's) solution, and that of the instructor. In this criticism the student points out wherein he considers his own solution or portions thereof, equal to or better than that of the instructor, with his reasons.

FOURTH LESSON.

THE SOLUTION OF TACTICAL PROBLEMS.

Let us now examine the methods by which tactical problems, whether in time of peace, or in the field in war, are solved, by the applicatory system.

The problem, as we have seen, is presented as a "situation" setting forth existing conditions so far as they are known. From this situation the leader must determine what he should do and how best to do it. He must then issue the necessary orders to his command, and see that these orders are carried out.

It may here be observed that such problems are not limited to tactics, but are constantly presented to leaders in all lines of human endeavor. And they may be and should be solved by the same systematic processes of thought that are prescribed for the military profession.

In the artificial problem of the class room the "situation" is set forth as a statement of certain facts or probabilities. In an actual case the "situation" will include everything that is known to the leader, and especially the results of his own personal investigations, or reconnaissance.

The Estimate of the Situation.

Being confronted with the situation the leader proceeds to think it over, to consider all its aspects, to look at it from every angle, and to determine what he should do and how to do it. This mental process is called "the estimate of the situation." It will be no innovation in the brain of a thinking man since, as we have observed, it is characteristic not only of tactics but of all serious affairs of life.

The "estimate of the situation" then is a logical process of thought culminating in a tactical decision.

It has been found by experience that better results are obtained if this estimate is made in a certain definite order or sequence. It is not desirable to restrict or limit the mental processes, nor is it possible to do so. But when all are trained to think along definite lines, quicker, better and more uniform results are obtained, and there is less likelihood that matters of importance will be overlooked. The program prescribed guides and assists the mental processes by insuring the consideration of all matters of importance in proper sequence, without restricting independence of thought.

The sequence is as follows:

1. *The mission.* What is to be accomplished?
2. *The enemy.* Everything that is known or that may reasonably be inferred concerning him.
3. *Our own forces.* This includes both the immediate command and supporting troops which might influence the decision.
4. *Conditions favorable and unfavorable.* The most important of these is the terrain, which always greatly influences tactical operations. Other possible conditions are weather, season, time of day, etc.
5. *Courses open.* A review of various possible methods of accomplishing the mission, with a comparison of the advantages and disadvantages of each.
6. *The decision.* A brief statement of the course of action determined upon.
7. *The plan.* A detailed statement of the part to be played by each element of the command.

The solution of a tactical problem may also be approached as follows:

- 1st. What task is to be accomplished? (Mission.)
- 2nd. What facilities are available to accomplish the task, and what conditions are favorable? (Our own troops, advantages afforded by the terrain, other favorable conditions.)
- 3rd. What difficulties or obstacles will interfere with the accomplishment of the task? (The enemy, unfavorable features of the terrain, other unfavorable conditions.)
- 4th. In view of the facilities and difficulties what should be done to accomplish the mission and exactly how should it be done? (The decision and plan of action.)

The mission. The most important consideration, which forms the basis of all subsequent thought and action, is the *mission* of the command. In a force which is an integral part of a larger force the mission will usually, although not always, be embodied in the orders of higher authority. For an independent command, however, the mission must generally be deduced from the commander's knowledge of the wishes or intentions of superior authority, and of the existing situation and conditions. It is here that the judgment of the commander is called into play, since the

accomplishment of his true mission may require a course of action entirely at variance with the orders he has received. It is for this reason that orders too restrictive, and in too great detail, should not be given to subordinates who are expected to exercise to any considerable degree, independence of command. Their initiative must not be unduly hampered, as unexpected developments may entirely change the situation, and with it the mission. For example, an independent command, sent forward to seize a certain town finds it occupied by a superior force of the enemy, while another large force is approaching from a flank, and threatening to cut off retreat. It is now apparent that the original mission must be abandoned. The commander's new mission has become that of saving his command by a prompt retreat. Gen. Von Verdy du Vernois says: "The officer who suddenly encounters the enemy while patrolling with his platoon must conduct his actions from a different point of view than if he commands his platoon as skirmishers in front of his company. A division in an army corps will generally be so situated that it must carry out an action, even though it be completely annihilated in so doing, and then it would still be promoting the general purpose; on the other hand, a division widely separated from an army would, as a rule, utterly fail to accomplish its mission if it allowed itself to be annihilated."

A full appreciation of his mission must be the leader's guide in all the confusing situations which will confront him. It must never be forgotten, and the wisdom of any course of action must be tested by asking: "Will this help me to accomplish my mission?"

It will be apparent that there will usually be an *immediate* mission as well as an *ultimate* or *general* mission. The immediate mission, as we have seen, may be completely changed by new developments in the situation. The ultimate or general mission is to do that which will best serve to accomplish the aims of the higher command. If in doubt a subordinate leader may usually determine his immediate mission by asking himself: "What would my commander do if he were here now and could see this situation as I see it?"

The enemy. The information concerning the enemy will be derived from a great number of sources. In the operations of small units the most reliable information will be obtained by personal reconnaissance of the leader himself, and no decision should be made without such reconnaissance when it is possible to conduct it. Each item of information must be weighed to determine its value as evidence. For example, the statement of a prisoner or hostile inhabitant is far less likely to be accurate than the report of a reliable officer, based on personal observation.

The important things about the enemy are his strength and composition, his weapons, his position, his tactical methods and his recent actions, from which his intentions for the future can often be accurately divined.

It should never be assumed that the enemy will remain inactive. In the absence of exact information it should be assumed that he will act with good judgment, and this usually means that he will adopt that course of action which we would least wish to have him take, or which would be most embarrassing to us. We are thus prepared for the worst, and if the enemy makes any mistakes we can take advantage of them.

The important matter of information concerning the enemy is further discussed under the head of "intelligence."

Our own forces. The leader's information concerning his own forces should be quite complete and accurate. There can be no excuse for its being otherwise. The most important considerations are their strength and location with reference to the enemy to whom they are opposed. The leader of a small unit should know what assistance he may count on from the supporting weapons (machine guns, one pounders and artillery). Other friendly troops in the vicinity will of course influence the decision. An adjacent unit serves to protect a flank which would otherwise be exposed. While reinforcement may be available in emergency, in coming to a decision the leader should not ordinarily count on this, but should plan to carry out his own mission with the forces under his own command.

Conditions—favorable and unfavorable. The leader next considers the various existing conditions and how they will affect either favorably or unfavorably, both himself and the enemy. Of these conditions by far the most important is the terrain. What does it offer in the way of cover or concealment, facilities for maneuver and deployment, field of fire, etc.? He must plan to utilize to the fullest the advantages which the terrain affords, and to evade as far as possible its disadvantages. Other special conditions may exercise an important influence in any particular situation.

Not all the facts and ideas which flash rapidly through the leader's mind will really influence his decision. The number of ideas that will crowd in upon him will be great. He must learn by practice to recognize the matters of importance and to discard the unimportant. He must develop a just sense of proportion.

Courses of action open. Having considered the various conditions of his problem the leader will now perceive that there are a number of courses of action open to him, any one of which might accomplish his mission. Each of these will present certain advantages and certain disadvantages. These should be carefully weighed and compared, and the course of action which appears most promising of success should be selected. If two or more appear equally promising of success that one should further be selected which offers the greatest results in case of success, or involves the least danger of disaster in case of failure.

The decision. Having selected his course of action the leader should reduce it to a simple general statement in a few words, thus: "To attack, enveloping the enemy's left"; "To retreat to *A*, and take up a defensive position covering the road *A-B*." This is the *decision*, the culmination or product of the process of thought which we have followed. It is well that this decision be put in definite words, preferably written. If the leader is not quite sure himself as to just what he intends to do, he will naturally have difficulty in expressing his decision. If he can state or write a clean cut, perfectly understandable decision, it is proof that his intentions are perfectly clear in his own mind.

The plan. With his decision as a basis the leader now formulates a detailed plan, setting forth exactly what is to be done by each element of his command.

He has now completed his estimate of the situation, has made a decision as to what he shall do, formulated a plan for carrying out this decision, and is ready to issue the necessary orders to his subordinates.

The power of thought. We have dwelt in detail upon this matter of estimating the situation because it is the most important duty which the leader of troops is called upon to perform. In every situation which confronts him he must think out his problems along the lines which have been indicated. He must even think ahead and thus forestall the emergencies that are certain to arise, answering the question, "what should I do if such and such things should happen?" Thus in combat, with its constant emergencies, the estimate of the situation becomes an almost continual process of thought. And always it is the thinking man who wins, both the battles of war and those of peace.

Always the leader must be thinking. It is not right to think for a while, and then grow weary, stop thinking, begin to guess, and take chances. The leader should never trust or be content with a decision not based upon careful thought. To think strongly and clearly, to keep on thinking when the mind and body are weary, requires endurance and persistence—or what we call *stamina*. It is a stamina similar to that which makes the boxer stand up to a stronger opponent who is punishing him severely, or which drives the college athlete on to finish the race for the credit of his college, even when his breath is gone and his heart feels as if it would burst. But mental stamina is a higher and more important form than either of these. Thoroughbred men and animals display stamina as a matter of instinct, even when there is no particular incentive. In battle the leader has the highest possible incentive to keep on thinking, for the lives of his men are in his hands and his country is looking to him for results, which will not be achieved if he stops thinking.

There are leaders who appear to reach correct decisions by intuition. But appearances are deceitful. The human mind is not capable of making tactical decisions by intuition. The highly trained leader estimates in a few seconds a situation which the untrained mind could not think out in an hour, or perhaps not at all. The trained mind thinks ahead, and when confronted with a situation instantly gives a decision, but a decision based on prior thought and not arrived at by intuition.

To be able to estimate correctly the situations which will confront him the leader must know the powers and limitations of the weapons at his disposal and especially the powers and limitations of the men who use them. He must be familiar with the approved tactical methods of his own army, as well as those of the enemy. He must have highly cultivated powers of observation and interpretation of the things he sees. He must be able to read a map and use a compass. He must have an eye for terrain and a knowledge of its influence on tactics. And, finally, he must be able to *think* rapidly, accurately and consistently.

Such leaders we must have. They may be developed from men with a proper foundation of intelligence and character, by the applicatory system of training. By constant practice in the solution of tactical problems, both indoors and outdoors, we must train our prospective leaders to think along right lines. And as a result of such training they will think that same way and evolve correct decisions, even in the turmoil and confusion of battle.

In this course and also in the course in Musketry, will be found a number of illustrative examples of the estimate of the situation in simple tactical problems.

The estimate of the situation is of course a mental process. As a matter of training the students should frequently be required to write out their complete estimates. Even when this is not required, or in an actual case, it will be well to make notes of important items of the estimate.

Hints for the Solution of Tactical Problems.

The following hints and suggestions as to the solution of practical problems in tactics, will be found helpful to the student and to the actual leader of troops:

1. Read the problem carefully several times, or pay close attention to the instructor (if the situation is given verbally). Stake out the positions of the troops on the map or sand table.
2. Note carefully what the problem calls for and give neither more nor less.
3. Determine your mission, bear it constantly in mind, make it your guide in every situation, and lay no plans nor issue any orders that are not in accord with your mission, or that will not help to carry it out. If you fully understand your mission you can state it clearly in words. Be sure to do this.
4. Estimate each situation rapidly, but not hurriedly or carelessly. Give your thought to the important things and do not waste time on those which are unimportant. Don't jump at conclusions and don't guess.
5. In estimating situations form the habit of thinking in the logical sequence given in this course. Do not jump from one thing to another or you may overlook important items. Think out each important idea to a logical conclusion.
6. Do not accept second-hand or hearsay evidence on matters that you should and could see for yourself. No other information is as accurate, valuable and timely as the direct evidence of your own senses. In a small command especially, the leader should be well to the front where he can conduct constant personal reconnaissance, and he should never make an important decision without such reconnaissance when it is possible.
7. Credit the enemy with good judgment. If you do not know where he is or what he is doing, assume that his position and conduct are those which will be most embarrassing to you, and take precautions accordingly. You are then prepared for the worst that can happen. If the enemy makes mistakes you can take prompt advantage of them.

8. Never forget that battles are fought with *men*. Do not overtax their endurance, nor subject them to greater losses than they can bear without breaking. The results to be attained will depend on the morale of the troops, and the highest morale may be destroyed by incompetent leadership, neglect or abuse.

9. The terrain should exercise an important influence on all your plans and actions. Study it constantly from your map and by personal observation, using compass and field glasses. Profit by its advantages and evade its disadvantages.

10. Pay close attention to matters of position and direction, time and distance. There can be no excuse for not knowing where you are, how long it will take you to reach a certain place, etc.

11. Adopt a simple plan and carry it out vigorously and consistently. Do not allow unimportant changes in the situation to change your plan, but take the necessary simple measures to meet emergencies as they arise.

12. Your plan should provide for the proper use of every element and every individual of your command, and your orders should make clear to every one of them exactly what he is to do.

13. Your plan should not be based wholly nor even chiefly on your information of the enemy, but should be dictated by your own mission. Retain the initiative by prompt, aggressive and continuous action. Force the situation, and compel the enemy to adapt his plans to yours.

14. Do not allow the stress and excitement of battle to cause you to depart from the simple and recognized methods of good practice, which you have previously learned. But do not hesitate to adopt a bold and original course when you are satisfied that you have good reasons.

15. Do not attempt to "straddle" a situation. If your decision is to attack, do so with all your force; if to retreat, do so promptly and thoroughly.

16. Do not attempt to accomplish too many things at once. Have one central idea or main purpose. Devote the great bulk of your force to this main purpose and as little as possible to secondary and less important purposes.

17. Do not disperse your force nor allow any part of it to get beyond your control.

18. Be bold, but do not be foolhardy. If you are in doubt, an aggressive plan will usually be the best procedure.

19. In following an aggressive plan, take the necessary precautions against surprise and disaster, by constant reconnaissance, watchfulness to the flanks, maintenance of contact with adjacent units, provision of a reserve, etc.

20. Look ahead and foresee the emergencies that may arise, but do not issue orders looking too far into the future and which may have to be countermanded. In small units where the leader personally and directly controls his subordinates, orders as a rule are issued for immediate execution.

21. Do not feel that you are bound by any rule or precedent, but if you depart radically from the usual procedure that has come to be recognized as "good practice," be very sure that you fully understand what you are doing and have good and compelling reasons for your conduct.

22. In giving orders make them simple, brief and clear. Use the commands and signals prescribed in the drill regulations (and in the course in Musketry) whenever they are applicable. (See subject of "Orders," *post.*)

23. Do not attempt to shift your responsibilities on to your subordinates, and do not allow them to shift theirs on to you. Indefinite and ambiguous orders are the earmarks of indecision and irresponsibility.

24. Watch the conduct of your subordinates, but do not harass nor interfere with them so long as they are satisfactorily performing their duties. If they are not competent they should be relieved and replaced.

25. Sound tactical procedure is characterized by simplicity and directness in plan and execution, observance of good practice, and vigor and determination in action. The best plan comes to naught if it is not adhered to. A fairly good plan will probably succeed if consistently and vigorously executed.

26. Above all make your plan simple. To carry it out successfully will require the co-operation of many men, some of them of quite mediocre intelligence. If the plan is complicated, if you have left any room for misunderstanding and confusion, you will find that things have a genius for going wrong.

27. Remember that success is the only criterion by which you will be judged. If you fail, make no excuses. If your failure is due to your own mistakes, analyze your conduct, acknowledge your mistakes, and do not make the same mistakes again. It will be much cheaper and less disastrous to make mistakes in this course, and to learn by them, than to make mistakes later, in battle, because you have not taken advantage of your opportunities for training during peace.

FIFTH LESSON.

PREPARATION OF PROBLEMS.

To prepare a good tactical exercise is usually more difficult than to solve one, and the preparation of problems should be regarded as an essential part of a complete course of military training.

It is to be borne in mind also that the prospective officer will be required not only to *lead* troops but also to *train* them. He will not be qualified to train even his non-commissioned officers unless he is able to write simple tactical problems. In training his subordinates he will naturally follow the methods that have been applied to himself. Accordingly, every student should be required to prepare a few simple problems, including their solutions, as a part of his training. The ability to prepare good problems is usually proof that the student has mastered the course in tactics.

Problems should be prepared with a view to teaching one or more tactical ideas or principles. However, they should not be strained or forced, but simple and natural.

The preparation of problems cannot be learned from a book, but only by practice. One's early problems will quite likely be crude, involved and ambiguous. Practice alone will correct these faults.

The following hints may be useful to those called upon to prepare problems in tactics.

Hints for the Preparation of Problems.

1. Suit your problem to the class of students to be instructed. Do not give regimental problems to non-commissioned officers, nor division problems to students not yet proficient in the tactics of the platoon.

2. Adjust your problem to the time that will be available for its solution, especially if it be a maneuver. Do not demand a four-hour task where only an hour is available, or the instructional value will be lost.

3. Build your problem around one or more sound tactical principles, make it teach a real lesson.

4. Consult some good problems of the service schools for proper forms. Follow these forms in a general way, but do your own thinking.

5. Don't be afraid of making the problem too simple. It is the simple principles that are the most important, and simple procedure that wins battles. The thing to fear is that the problem may be too complicated. Do not try to convey too many ideas nor to teach too many lessons in one problem. It takes time to develop tactical sense and judgment. A few ideas well driven home are worth more than a large number which cannot all be mastered, and which tend to confuse the student. Make the students *think*, but along simple, direct lines.

6. Give the problem all possible semblance of reality. Do not force situations nor introduce unnatural conditions. If it be on the terrain, select the best terrain available and make the problem fit it. If you use the sand table you can mold an ideal terrain to suit your own wishes.

7. Let the problem develop naturally, especially if it be a war game or maneuver. Do not try to coerce your students into solving it your way. Authorship confers

no special rights of interpretation. If the solutions take a course quite different from your expectations it is probably a sign that you need more practice in the preparation of problems.

8. Make the problem as brief as is compatible with perfect clearness. Omit unnecessary details which do not influence the solution. Write it over several times, cutting it down. Then read it to some one and see if it is perfectly clear to him.

9. If the problem be a maneuver make it progressive and interesting to all. Give everybody something to do. Do not have the troops idle for long periods on the one hand, nor march them around too much on the other. If the problem is not made interesting and pleasant much of its instructional value is lost.

10. In a two-sided war game or maneuver make the tasks of the opposing sides approximately equal, so that each has a chance to accomplish its mission. This is stimulating.

11. It adds to the interest of a maneuver if it culminates in a contact between the two opposing sides. This should take place in a terrain suitable for illustrating the principles of combat. In starting such a maneuver the opposing sides should be entirely separated.

12. A problem, especially a maneuver, when once started should be carried to completion with the least possible interruption.

The preparation of problems should not, of course, be undertaken in advance of training in the solution of problems.

Details of Troop Leading to be Taught.

Tactical problems and field maneuvers too often deal with generalities, the larger aspects of maneuver and combat, and develop so rapidly that the minor points of troop leading, as applied to the squad, platoon and company, are of necessity slurred over or omitted. It is to be remembered that in the Reserve Officers Training Corps as well also in the National Guard and the Army, it is the instruction of non-commissioned officers and junior commissioned officers with which we are chiefly concerned. To such it is these small details that are of special importance. It is leaders of small units, not regimental and division commanders, that we are seeking to create. Accordingly, it is better that tactical problems, or the "situations" in a continuing problem, should be of the utmost simplicity, involving one or at most a very few fundamental principles. And in each such simple situation the thoughts, actions and commands of the leader of the small unit should be simulated to the last detail. The suggestions as to practical problems in this text have been prepared with this mission constantly in mind.

Those who are seeking to fit themselves for high command may assert that these problems are too elementary in their nature. They are reminded that the weakness of our army in the next war is certain to be found amongst its soldiers and junior commanders, whereas these men are, or should be, the backbone of the army. It is essential that they be trained, not for higher command, but for the simple duties they will actually be called upon to perform. And those who have ambitions will do well to remember that in mounting a ladder one must usually begin at the bottom. No officer who hopes to command troops can afford to be ignorant of the simple details of troop leading as applied to small units.

PREPARATION AND USE OF THE SAND TABLE.

The sand table is now generally recognized as a most valuable means of instruction in many military subjects, and there are many civil subjects for which it might be used with equal profit.

It is employed for instruction in map reading and sketching, in field fortification to teach the location of defenses as well as the details of their construction, and in

musketry and tactics for instruction in target designation, and for demonstrations and other tactical exercises of all kinds.

The frequent reference to the sand table throughout the present course (Minor Tactics) will indicate its value as an accessory in the applicatory method of instruction. All who are charged or may be charged with the training of non-commissioned officers and junior officers should be familiar with the preparation and use of the sand table.

Description.

The sand table is simply a box mounted on trestles to a convenient height, or a curbed table, partially filled with sand. On such a table a piece of terrain is represented in miniature to any desired scale, by moulding the ground forms in moistened sand—the hills, valleys, etc. It is thus a form of relief map. (Plate 10.)

The effect of realism on a sand table terrain is limited only by the imagination and ingenuity of those preparing it. Woods and standing crops may be represented by the use of color (green or yellow), in the form of paint or kalsomine powder or ground chalk, sifted on with a piece of wire netting or a salt cellar. Small streams are represented by blue coloring, larger streams, ponds and lakes by bits of glass, isinglass, celluloid, tin or small mirrors, imbedded in the sand. Tree masses are represented by sifting loose sand upon the finished surface to the proper height, and coloring it green.

Roads and railroads may be traced with a roller or stylus. A corrugated roller may be made to simulate the ties of a railroad. Roads may be colored yellow or brown. Buildings of all kinds, bridges and other artificial features, may be fashioned from bits of wood and colored with ink or crayons.

Furnishings. Sets of miniature furnishings to heighten the realistic effect of the sand table have been prepared. Some of these are for sale. Undoubtedly they tend to make the instruction more entertaining and therefore usually more valuable. But it is necessary to have a care that, regarded as toys, these devices do not unduly distract the attention of the student from the real purpose. So far as the present course is concerned this purpose is *not* the making of toy landscapes, but the teaching of the technique of tactics. Such equipment, while perhaps desirable, is by no means essential, and an entirely satisfactory representation of the terrain may be prepared with no materials other than sand, powdered paint, bits of glass or isinglass, and wood, matches, etc., all of which are easily obtained in any locality. A photograph of a well-prepared sand table might easily be mistaken for that of an actual terrain by a not too critical observer.

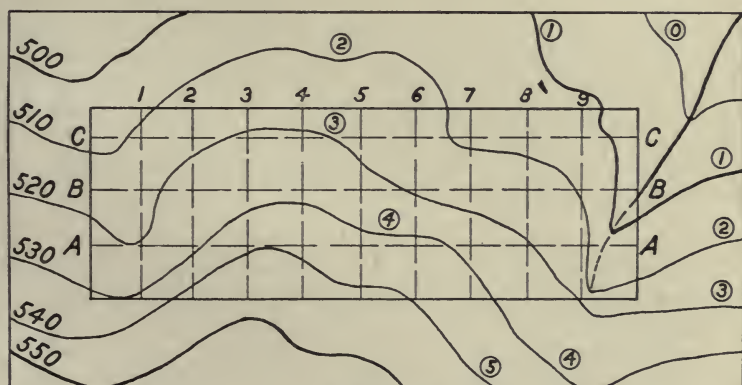
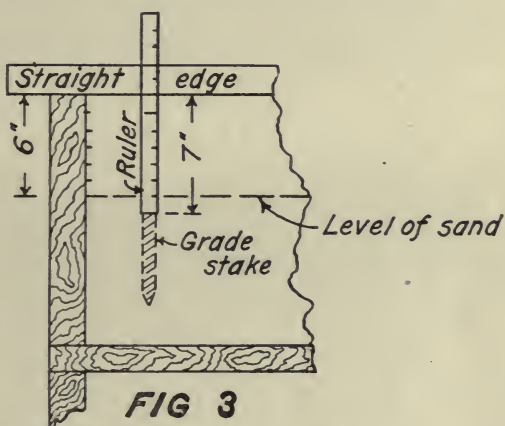
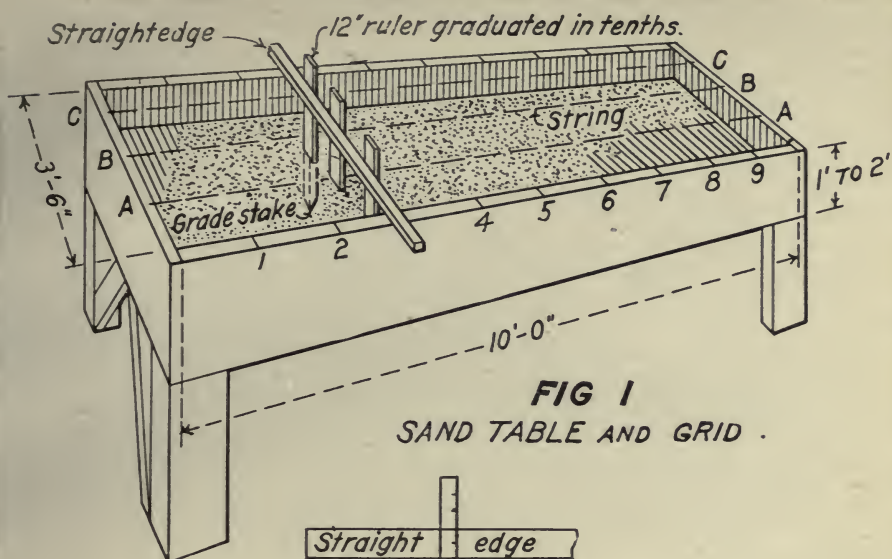
The sand table is an interesting device and a most excellent means of practical indoor instruction in many subjects, both civil and military. Its value in making the course both more entertaining and more profitable should not be overlooked. Every institution or organization which seriously endeavors to teach the art of war, should provide sand tables for instructional purposes.

Advantages of the Sand Table as a Medium of Instruction.

While the sand table is often regarded merely as a substitute for actual terrain, yet it has in fact, as a means of instruction, some marked advantages over the ground itself.

1. It affords a bird's-eye view, enabling the student to grasp at a glance all the details of a considerable area in their proper relation to each other, in a way that is not possible on the ground itself.

2. *Availability.* Many colleges and armories are located in towns or cities, where it is impossible to take the students to a suitable piece of ground in the country, give the necessary training and return to the college, within the short periods ordinarily available for instruction. The sand table is instantly available.



3. *Suitability.* The instructor (or student) may mold on the sand table exactly the terrain that is desired, whereas on the ground he must take what he can find, which will often be quite unsuited to his purposes.

4. The sand table is independent of weather and season.

5. Tactical demonstrations are more easily carried out on the sand table than on the ground. They are more easily comprehended, and trained demonstration troops, which are not always available, are not required.

The advantages of the sand table over other forms of relief map for tactical instruction are several:

1. It is cheaper and simpler. Anybody can make a sand table in a short time with little expense. Therefore it will often be available when more expensive types cannot be made or secured. This fact has a most important bearing on the war training of large numbers of officers and non-commissioned officers. At the instruction camps sand tables may be made in large numbers when other forms of relief map would be out of the question. Former members of the R. O. T. C. who will be used as instructors will be familiar with sand table methods of instruction.

2. Any desired terrain can be quickly reproduced.

3. Any scale of reproduction desired at any time, for any purpose, can be used, and any relation between horizontal and vertical scales.

4. The sand table simulates actual terrain more closely than a relief map of any other material.

The advantages of the sand table over the topographical map are:

1. The student is not required to devote a large part of his attention to reading the map. Map reading is certainly of importance, but in this case we are teaching tactics.

2. On the sand table it is always possible to prepare the terrain exactly as wanted to bring out certain principles. On any other form of map it is usually necessary to adapt the problem to the map to some extent.

3. The sand table can use any scale. In particular it can use a larger scale than any map.

Dimensions. The sand table may be made in any size or shape, according to the purpose for which it is to be used, and the floor space available. A convenient size for instruction in tactics is 10 feet x $3\frac{1}{2}$ feet or 10 feet x 4 feet. The depth of the curb is from 1 to 2 feet, and the height above the floor should be the same as that of an ordinary table. (Fig. 1, Plate 10.)

Equipment required. The box is a little more than half-filled with fine sand. It is well to add a little clay to the sand, so that when moistened it will be more easy to mould and will retain its shape for a reasonable time. Do not add too much clay as this will cause the model to harden and crack. Moulders' sand is suitable if it can be obtained, but any sand will answer.

The equipment necessary to make up the sand table includes:

1. About a barrel of sand, more or less according to size of table.

2. Powdered paint, kalsomine or chalk—green, yellow, blue, and other colors as desired.

3. Some pieces of glass, isinglass, celluloid or bright tin, to represent water.

4. Some pieces of linen backed paper, about 12 inches square.

5. A hardwood straight-edge long enough to reach across the table.

6. About 60 grade stakes, $\frac{1}{2}$ to $\frac{3}{4}$ inch square, sharpened at one end, half 3 to 4 inches long, half 6 inches long.

7. A ruler 1 foot or 15 inches long, graduated in tenths of an inch, or centimeters; or a piece of straight hardwood of the same size, on which graduations may be marked.

8. Thumb or carpet tacks. Twine.

9. Miniature houses and bridges may be made of wood with a pocket knife and colored with ink or crayon.

10. Other miniature furnishings as desired.

To Reproduce on the Sand Table a Piece of Terrain from a Contoured Map.

The sand table has a fixed size. Accordingly, the scale of the sand table terrain will depend on the actual size of the area represented as compared with the fixed area of the sand table. It is not necessary that this scale be exact, that is, 100 to 1 for example. It may be made exact if desired, but 98 to 1 or 103 to 1 will answer as well. It is, however, evidently necessary that the terrain to be represented have the same shape or proportions as the sand table. The sand table is a rectangle whose sides are in the proportion of say, $3\frac{1}{2}$ to 10. Therefore the terrain to be reproduced must also be a rectangle with sides in the proportion of $3\frac{1}{2}$ to 10.

If it be desired that the scale of the sand table shall be, for example, ten times that of the map, construct a rectangle (of paper or tracing cloth) whose sides are $1/10$ those of the sand table, or 0.35 foot by 1.0 foot. Lay the tracing cloth over the map, and shift it about until the rectangle covers the area it is desired to reproduce. Construct on the map area, or on the tracing cloth, a grid of squares (see Plate 10). It is better to divide the long dimension of the area into 10 equal parts and its short dimension into $3\frac{1}{2}$, as the squares will then correspond to one foot squares on the sand table. But if the terrain is very diversified or an accurate reproduction is desired, 9-inch or 6-inch squares may be used. Anything smaller than this will waste time. The long lines are marked *A, B, C* (etc.), and the short lines 1, 2, 3 up to 10 (or more, if smaller squares are used). The intersections or corners of the squares will then be designated as *A₁, B₁, C₁; A₂, B₂, C₂*, etc. Elevations along the edges of the map area may also be taken.

A grid for the sand table, corresponding to that of the map, is then constructed. The edges of the table are graduated in feet. A piece of string is stretched parallel to the long edge and one foot from it, a second string one foot from the first, etc. (*A-A, B-B* and *C-C*, Fig. 1, Plate 10). The numbered lines of the grid are made by laying a straight-edge parallel to the short dimension of the table. (Fig. 1, Plate 10.)

It is convenient to take the contour interval of the table as one inch (or one centimeter) or some multiple thereof (2 or 3 inches) according to the relative scales of the map and the sand table, and the amount of relief it is desired to show. The vertical scale should always be exaggerated as otherwise the terrain will appear too flat.

Taking now the map grid, note and record the elevation of each intersection. This is readily done by interpolating between contours to the nearest foot. Thus the intersection *B-3* (Fig. 1) is about 0.8 of the distance from the 520-foot contour to the 530-foot contour. Hence, its elevation is about 528 feet. Having recorded the elevations as in the table following, it is noted that all of them are above 500 feet. Hence, we may subtract 500 feet from all readings. If we now divide the results by 10 we have the number of contour intervals that each point is above 500. Columns 2 of the table give the actual elevations. Columns 3 give these elevations reduced to contour intervals above 500.

| 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
|----------------|-----|-----|----------------|-----|-----|----------------|-----|-----|
| A ₁ | 520 | 2.0 | B ₁ | 516 | 1.6 | C ₁ | 512 | 1.2 |
| A ₂ | 529 | 2.9 | B ₂ | 523 | 2.3 | C ₂ | 517 | 1.7 |
| A ₃ | 539 | 3.9 | B ₃ | 528 | 2.8 | C ₃ | 521 | 2.1 |
| A ₄ | 538 | 3.8 | B ₄ | 528 | 2.8 | C ₄ | 521 | 2.1 |
| A ₅ | 532 | 3.2 | B ₅ | 524 | 2.4 | C ₅ | 517 | 1.7 |
| A ₆ | 532 | 3.2 | B ₆ | 520 | 2.0 | C ₆ | 515 | 1.5 |
| A ₇ | 527 | 2.7 | B ₇ | 517 | 1.7 | C ₇ | 509 | 0.9 |
| A ₈ | 521 | 2.1 | B ₈ | 514 | 1.4 | C ₈ | 508 | 0.8 |
| A ₉ | 511 | 1.1 | B ₉ | 508 | 0.8 | C ₉ | 503 | 0.3 |

Another method often employed, is to assign arbitrary numbers to the contours. Find the lowest contour on the terrain to be represented and number this 1. Number the next highest contour 2, and so on (Fig. 2). Now read the elevations to the nearest tenth and record as before.

This will give Columns 2 of the table below:

| 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
|----|-----|-----|----|-----|-----|----|-----|-----|
| A1 | 3.0 | 6.0 | B1 | 2.6 | 6.4 | C1 | 2.2 | 6.8 |
| A2 | 3.9 | 5.1 | B2 | 3.3 | 5.7 | C2 | 2.7 | 6.3 |
| A3 | 4.9 | 4.1 | B3 | 3.8 | 5.2 | C3 | 3.1 | 5.9 |
| A4 | 4.8 | 4.2 | B4 | 3.8 | 5.2 | C4 | 3.1 | 5.9 |
| A5 | 4.2 | 4.8 | B5 | 3.4 | 5.6 | C5 | 2.7 | 6.3 |
| A6 | 4.2 | 4.8 | B6 | 3.0 | 6.0 | C6 | 2.5 | 6.5 |
| A7 | 3.7 | 5.3 | B7 | 2.7 | 6.3 | C7 | 1.9 | 7.1 |
| A8 | 3.1 | 5.9 | B8 | 2.4 | 6.6 | C8 | 1.8 | 7.2 |
| A9 | 2.1 | 6.9 | B9 | 1.8 | 7.2 | C9 | 1.3 | 7.7 |

Total of elevations, 82.0. Average elevation $(82 \div 27) = 3.0$.

If we take 1 inch as the contour interval of the sand table we thus have the elevations in inches of all points of the sand table terrain above the assumed zero (Columns 2). If the contour interval for the table is to be 2 inches, these must be multiplied by 2, etc.

The average elevation of the terrain to be reproduced should be the same as the average height of the sand in the table. Otherwise it will be necessary to add sand to or remove it from the table, though there is no grave objection to this. To obtain the average elevation of the sand, level off the sand on the table. To obtain the average elevation of the terrain to be represented, add the elevations in Columns 2 of the foregoing table and take their average (divide by 27—the total number, and take the nearest whole number). This is found to be 3.0. Therefore the No. 3 contour should be at the height of the levelled off sand. Ordinarily it will be sufficient to take the middle contour as the average height of the terrain. Thus, in the case shown in the figure the contours run from 500 to 540, and 520 may be taken as the average. It may be necessary to add or remove a little sand.

Suppose the level of the sand to be any number of inches below the top of the curb around the table, for example, 6 inches (take the nearest even inch), and that the assumed contour interval is 1 inch. Then the No. 3 contour should be 6 inches below the upper edge of the curb (or the bottom of the straight-edge when laid on the curb). The No. 2 contour will be 7 inches below the curb, the No. 4 contour 5 inches below (Fig. 3, Plate 10). We may thus formulate a simple rule for this particular case: To find the distance in inches from the bottom of the straight-edge to any contour, or any intermediate point between contours, subtract the elevation of the point as given in the preceding table (Column 2) from 9 inches. These results are given in Columns 3 of the preceding table. A like simple rule may be formulated for any other conditions. Thus, if the level of the sand were 7 inches below the top of the curb, and at the level of the No. 5 contour, the tabular elevations would be subtracted from 7 plus 5, or 12 inches, to give the distance from the straight-edge to the point in question. Fractional parts of an inch should not be used. Take the elevation of the sand to the nearest inch for this determination.

The foregoing table having been prepared we are now ready to reproduce the terrain on the sand table. The sand is moistened and roughly leveled off, the strings stretched, as heretofore described and shown in Plate 10. Lay the straight-edge successively on the lines 1-1, 2-2, 3-3, etc. (Fig. 1). The intersections of the straight-edge with the strings will be the points A-1, B-1, C-1; A-2, B-2, C-2, etc. The figure shows the straight-edge on the line 3-3. Take a grade stake of appropriate length and stick it into the sand exactly below the point A-3, indicated by the intersection of the straight-edge and the third string. From Column 3 of the preceding

table we see that this point is 4.1 inches below the curb. Push the stake down with the ruler until it is in its proper position, reading the ruler at the bottom of the straight-edge. (Fig. 3.) Proceed in like manner to set stakes at each intersection.

Another method, which some may find simpler, is as follows: Prepare a table or grid showing the map elevations at each intersection. Note the average height or middle contour. Place a grade stake (anywhere on the table) approximately at the height of the leveled sand. Lay the long straight-edge across the table above the stake. With a short plain piece of wood measure the distance from the bottom of the straight-edge to the top of the stake. Mark this with the reference of the middle contour. Lay off contour intervals in both directions (up and down) and divide into tenths (or twentieths if the map interval is 20 feet). The *highest* contour should be near the bottom of the stick, the *lowest* contour above. Each grade stake is now pushed down until the bottom of the horizontal straight-edge is opposite the proper map reading on the stick.

In addition to the grade stakes at the intersections, stakes may be set at critical points within the squares, such as hill-tops, if this is considered necessary.

When the grade stakes are set some will be below the level of the sand, others will project above. An assistant scrapes away the sand which is above the stakes, and heaps it up about the stakes which project above the sand level.

When all the grade or elevation stakes have been placed, remove the strings and straight-edge. With the hands finish scraping away the sand from the stakes which are below the original level, and heaping it up about those which are above, being careful not to move the pegs. If necessary add or remove sand, until at each grade stake or peg the sand is just level with the top thereof. Now take the map, and using it as a guide mould the sand between the stakes until it conforms to the contour indicated by the map, as nearly as may be judged by the eye. Smooth the surface of the sand by rolling it with a bottle, and by laying the linen backed cloth upon it and rubbing with the hand.

Using the gridded map as a guide, and the grade stakes as reference points, trace the streams and roads, the outlines of wooded areas, etc., and locate such important features as towns, large buildings, etc. When this has been done push the grade stakes down into the sand.

The map should now be dressed up or furnished to give it a realistic appearance. Streams may be represented by strips of glass, etc., their edges covered with sand, or by a trail of blue powder (paint, kalsomine or chalk). Sprinkle loose sand by handfuls over the wooded areas, to give them the rough, irregular appearance of woods as seen from the air, and color with green powder. Roads are traced by using a specially prepared roller, or a circular object such as an inkwell cover, or with a pencil. Telegraph lines may be represented by matches. Place small blocks of wood to represent houses and bridges, where shown on the map.

The table is now ready for use. Troops may be represented by bits of matches or toothpicks dipped in colored ink, beads or beans, pins with colored heads or bits of colored paper stuck on them; for example, privates by ordinary pins, non-commissioned officers by blue-headed pins, leaders by black-headed pins, the enemy by red pins.

Number of tables required. For the solution of problems a sand table 10 x 4 feet in size will answer for 12 to 15 students. For convenience, especially for writing, a shelf about 1 foot wide may be placed around the table just outside of and flush with the top of the curb.

For demonstration purposes one table may be made to serve for a large number of students by placing elevated seats (like baseball bleachers) on one or more sides.

Where ample floor space is available tables of larger size may be used, especially for instruction in field fortification.

Practical instruction. Practical instruction in the preparation of the sand table, or at least a demonstration of its preparation and use, should be given in connection with this lesson.

SIXTH LESSON.

ORDERS.

Necessity for proper orders. Tactical plans or decisions are translated into action through the medium of orders. It will be evident that if the commander is not sure in his own mind his irresolution will be reflected in his orders, and communicated to his subordinates. Accordingly, he should never begin to issue orders until he has fully estimated the situation and formulated a definite plan of action. This plan is then communicated in orders clearly expressed, so that there can be no possibility of misunderstanding. Good orders cannot follow a faulty or indefinite plan, but the best of plans will be useless unless the subsequent orders are properly drawn. Vague orders are a sign of irresolution and will certainly result in indifferent execution.

The issue of orders is accordingly a vitally important duty of all leaders, and the ability to issue good orders is acquired only by practice in preparing orders to meet various assumed concrete cases. Tactical problems should generally include the issue of orders, whether written or verbal.

Agreement of orders and plans. The orders, of course, must be consonant with the plan. Any disagreement between them might naturally result in the failure of the operation. In the case of written orders they should be carefully checked against the plan, before being issued.

Precision in orders. The student will do well to observe, at the outset of the course in tactics, that *precision* in the preparation of orders is of the first importance. It is not sufficient to merely outline what the orders would be, or to write "sketchy" orders "*about* as they would be given." This would tend to develop careless habits which would be difficult to overcome later. Careless approximations cannot be permitted in orders nor in training in their preparation. The student, in every case, should prepare the order as seriously and painstakingly as if the success of an operation depended upon it. Every idea must be expressed as briefly and clearly as possible. When orders are called for in problems this means orders *exactly as they would be given* in the field, and not a conversational approximation. Precision should be and will be insisted upon. Indifferent training in this important matter may be worse than no training at all.

Orders—to whom issued. Tactical orders are issued by a commander to his *immediate* subordinates, but not to *their* subordinates. For example, a regimental commander issues orders to his battalions and howitzer company. He does not issue orders to the companies composing the battalions. A rifle company commander looks for orders to his immediate superior, that is, his battalion commander, not his regimental commander. This custom is essential in order to preserve the hierarchy of command and fix the responsibility of all subordinates within their own spheres.

A regimental commander who habitually gives orders to his companies direct, trespasses upon the province of his battalion commanders, usurps their prerogatives and destroys their usefulness, endangering the whole fabric of organization.

When in emergency it is necessary to give orders to a lower subordinate otherwise than through his immediate superior, the latter should be promptly notified of the action taken. A company commander will obey the direct orders of his regimental commander, but he should inform his immediate superior of any orders thus received.

CLASSES OF ORDERS.

Field and Administrative Orders.

Orders for tactical and strategical operations are generally known as "field orders," and so designated in the headings of written orders. They may include certain details relating to administrative matters. Orders concerning purely administrative matters, not directly related to tactical operations, are known as "administrative orders." Separate administrative orders may also be issued in connection with or as annexes to the field orders of large commands.

Written, Dictated and Verbal Orders.

Field (or administrative) orders may be written, dictated or verbal (oral). The class employed depends on the size of the command, the extent of the operation covered, the time available, and other conditions. No rigid rules can be given. In general, however, all orders of divisions or higher units are written, that is, type-written, mimeographed or printed. Orders of brigades and regiments are written or dictated; those of the battalion and company are usually dictated or verbal. The orders of the smaller units, platoon and section are almost invariably verbal, or conveyed by means of a signal. The foregoing are by no means invariable. For example, in the case of a rencontre or advance guard engagement the orders of a regiment might and often would be issued verbally. They should later be reduced to written form for the organization records. In emergency even the orders of a division might be oral—this would be exceptional.

The dictated order is one issued verbally by a commander and taken down in writing by his subordinates. The subordinate, unless familiar with shorthand, will seldom take down the entire order, but will make notes of all items necessary to him.

Individual and Combined Orders.

Orders may also be individual or combined—a combined order being one covering the entire command. It is frequently necessary, in units of all sizes, to issue orders individually in the first instance. These should be later consolidated into a combined order. Even when orders are issued individually, subordinate units of a command should be informed, in a general way, of the missions of other subordinate units, as this is usually essential for their proper guidance.

Preliminary and Warning Orders.

It is frequently necessary to make preliminary arrangements for a maneuver or combat, or to give subordinate commanders warning of an impending operation, in advance of the issue of the complete formal order. For example, in the case of a large command which has been stationary for some time, warning of an impending move should be given to permit necessary arrangements to be completed. An order prescribing the times and places at which various units are to assemble in preparation for a march, is known as an "assembly order." A commander desiring to send out a patrol would often designate the detail for the patrol, the preparations to be made, etc., the night previous, reserving the instructions to the leader until the following morning.

Preliminary orders may take the form of written field orders, or may consist simply of messages or verbal instructions to subordinates.

Letters of Instruction.

In the case of operations which will extend over a considerable period; during which many changes in the situation are apt to arise, it will evidently be impossible to issue in advance detailed orders to cover the entire operation. Such situations are especially characteristic of extended operations by very large forces, but they also frequently arise in the case of smaller forces operating more or less independently—even in the cases of small patrols sent to some distance for the purpose of gaining information. In such cases detailed instructions should be avoided, and the orders would take the form of written or verbal instructions of a general nature, in which the mission or purpose to be accomplished would be clearly stated, but the means to be adopted would be left largely or entirely to the judgment of the subordinate charged with the execution.

Commands and Signals.

The operations of small units (squads, sections and platoons) acting as parts of larger forces, are largely controlled by means of the standard commands and signals prescribed in the drill regulations. These standard commands will be applicable to

a large number of the situations that will arise on the march or in combat. They should invariably be used whenever applicable, and orders in rambling conversational form should not be given in cases where the standard commands will meet the situation.

Other simple situations in the operations of small units are met by brief orders expressed in terse and characteristically military language, and all leaders should be familiar with this form of order. A number of examples of such simple orders will be found in this course and also in the course in Musketry. It is recommended that their form and verbiage be carefully noted.

VERBIAGE OF ORDERS. MILITARY TERMINOLOGY.

Every profession has its characteristic language, and this is true of the military profession. If you were a doctor, and you talked to a man who claimed to be a doctor you would soon discover whether or not his claim was true *by the language he used*. If he did not speak in professional terms you would know he was a fraud, and you would not intrust one of your patients to his care. It is exactly thus in the military. A company of trained soldiers is intrusted to the command of an officer they have never seen before. As he gives orders they notice at once that he does not use the professional language they are used to. They lose confidence in him at the outset. And rightly so, for if he knew the military game he would use military language.

Therefore any man who hopes to be a successful leader must learn the language of the profession. It is in giving orders above all, that this language is used. If you talk in a foreign tongue your men will not understand you and will not trust you.

This language can be acquired only by study and practice. Study the orders in the problems issued by the service schools, note their form and the expressions they use. And practice writing and giving verbal orders in the problems and exercises which will form part of this course.

Clearness in orders. The most essential characteristic of an order is clearness. It must be understood. But clearness and brevity usually go hand in hand. Use no more words than necessary to bring out your meaning. Make your sentences short. Cultivate the style known as "telegraphic." Rewrite your orders and see if you cannot reduce their length, and at the same time make them clearer. Then try them on somebody else and see if he catches your meaning *promptly*.

The following instructions concerning the verbiage of orders will be found useful in cultivating a good and uniform style.

Instructions for the Preparation of Orders.

1. Use positive and decisive language. Avoid such expressions as: "If possible," "if you think best," "if conditions are favorable," etc. Such expressions indicate irresolution and a desire to transfer part of the commander's own responsibility to his subordinate. Tell the subordinate exactly what he is to do, without any "ifs" or "buts."

2. Use affirmative, not negative expressions. Thus: "The field trains *will not leave* camp until" is better expressed "the field trains *will remain* in camp until."

3. Avoid any other expressions in which the omission or misinterpretation of a single word may change the sense of the order.

4. Avoid expressions depending on an uncertain viewpoint of the observer, as "to the right of X —," or "beyond X —." Compass directions should be given, as "east of X —"—this removes any possibility of misunderstanding.

However the term "the front," has a definite meaning. It is the most advanced line occupied by our own troops, that is, the line nearest the enemy. "To the front" or "towards the front" means "in the direction of the enemy," although the exact compass bearing of this direction cannot always be stated, and will vary considerably on different parts of the front. "The right (left) flank" means the flank of a line on the observer's right (left) as he faces in the general direction of the enemy. The enemy's "right" is his right as he faces us. These terms

remain fixed whether the troops are advancing or retreating. Thus in retreat, the right flank is on the left of an observer facing to the rear or away from the enemy.

5. There are certain other rules as to direction which should be noted. The "head" and "tail" of a column refer to the direction of march, regardless of where the enemy may be—the head being always in the direction of movement. The right bank of a stream is on the observer's right as he faces downstream. The right of the road means on the observer's right in the direction of his movement. To avoid any possibility of ambiguity compass directions may be used, as "the north side" of the road.

6. Time should always be given as clock time of a clock or watch running on standard time, the day being divided into two periods of 12 hours each, known as A. M. and P. M. "Local time," "sun time," "daylight saving time," etc., should never be used, as they inevitably cause confusion. The practice of dividing the day into 24 hours, as was done during the World War, should not be followed—"16 hours" should be expressed as "4.00 P. M." (standard time). Noon and midnight should be expressed as "12 noon" and "12 midnight" and not as "12 M.," which is ambiguous. Midnight separating two days is identified thus: "12 midnight, June 2-3." This means midnight between June 2 and June 3. A night period running from before midnight until after, is expressed as "night of June 2-3."

It is of course of the utmost importance that all watches be "synchronized" or set to the same time. This should be done at least once every 24 hours, and all officers should have good watches and should carefully regulate them.

7. Do not use such expressions as "daylight," "sunrise," "dusk," "dark," etc., but give standard times. These expressions are uncertain. No two people will agree as to the exact instant when it is "dark," and if the day be cloudy the time of sunrise is a matter of conjecture. In preparation of orders it is frequently necessary to know the times of sunrise and sunset, the phase of the moon, etc. These may be determined from an almanac.

8. Days of the week are not used in orders, but dates are expressed as "June 2, 1921," or "2 June, 1921."

9. The names of localities should be printed in full in CAPITALS, thus: "GETTYSBURG, PA." If there be a local name in common use which differs from the name as given on the map, the former may be placed in parentheses following the latter, thus: "TRIER (TREVES)," "SAALZBURG (CHATEAU SALINS)." If the pronunciation is markedly different from the spelling it should be given phonetically following the name, thus: "GLOUCESTER (Gloster)," "GILA (Heela)."

10. A road is designated by naming a number of important towns thereon, covering at least the portion of the road referred to, thus: "The LEAVENWORTH-LOWEMONT-ATCHISON road." The number of places named should be sufficient to completely identify the entire road. Railroads are designated by giving their full names, followed by the authorized and usual abbreviations used on their rolling stock, thus: "CHICAGO, MILWAUKEE AND ST. PAUL RAILROAD (C. M. and St. P. R. R.)," "ST. LOUIS AND SAN FRANCISCO RAILROAD (FRISCO LINE)," etc. The full name having once been given the authorized abbreviation may thereafter be used.

11. Localities of military importance should be described so that they can be identified both on the map and on the ground, thus: "The ADAMS farmhouse (first house south of SILVER RUN on the west side of the JONESBORO-WESTON road)," "ROAD JUNCTION 621 (2000 yards due west of the center of POTTSTOWN on the road to OAK CENTER)."

If "gridded" maps are available, localities are accurately described by using rectangular co-ordinates. This method is explained in the course in Map Reading.

As a rule any locality of relatively small general importance may be identified by:

a. The local name.

b. A brief description of the locality.

c. Its direction and distance from some important point nearby, which can be positively identified both on the ground and on the map.

12. In combat, directions of attack and boundaries of zones of action should be prescribed in minutest detail especially in the case of larger units. Compass directions alone are usually unsatisfactory and should be supplemented by easily identified landmarks if possible. A designation for a boundary of a zone of action such as: "A line northwest through cross-roads 651," is unsatisfactory. It is better if possible to name a number of localities, even if this results in a slightly irregular line, thus: "Left boundary of zone of action JONES farm—cross-roads 651—Hill 740—all inclusive."

13. The excessive use of abbreviations, especially of initial letters, is to be carefully avoided. None but the so-called "authorized abbreviations" should be used. These will include:

- a. The months of the year (Jan., Feb., etc.).
- b. A. M. and P. M.—meaning before and after noon.
- c. Certain abbreviations for military organizations and titles (inf., arty., brig. gen., etc.).

d. Abbreviations for localities, habitually employed on the maps in use, notably the names of states (N. Y., TENN., etc.), and such expressions as CUMBERLAND MTS., APPOMATOX C. H. (Cumberland Mountains, Appomatox Court House).

A number of authorized abbreviations which may be used in orders are given in the Appendix.

14. The correct military words and expressions should invariably be employed in conveying military information. These constitute a language in themselves, which can be learned only by study, practice and experience. The more important of these terms in their correct application will be found throughout this course in military training. A glossary of tactical terms is given in the Appendix to this course. A few examples will suffice to indicate the importance of correct use of military terminology.

Do not say "the distance between" two organizations on the same line. Space measured parallel to the front is known as "interval," not "distance." Do not speak of the "sector" of a unit in attack. Sector refers to defense. The lane in which a unit attacks is called its "zone of action." Do not say that a column will "pass" a certain point at a certain time when you wish it to "clear" the point at the time stated. The expressions "precede" and "follow" have a military meaning in addition to their ordinary meanings. When one organization "precedes" another in column it usually means that the organization in front maintains the prescribed distance from the one in rear, and conversely when the term "follow" is used. If it is positively decided to march to a certain point and there halt, the order should direct "march to X." If it be uncertain where the march will end the order should direct "march *towards* X," etc.

Amount of Detail in an Order.

The amount of detailed information and instructions that should be included in any order is a matter of great importance, and one also of considerable difficulty to those not experienced in formulating orders. It varies greatly with circumstances, and good orders, containing neither too much nor too little, can be written only as a result of much practice.

Brevity in orders. An order should always be as brief as is compatible with clearness and completeness. Short, crisp orders are much less confusing than long, rambling ones. A "snappy" order encourages snappy execution. The fewer the words in which any idea is expressed the better, as a rule, it will be understood, provided the few words are skillfully chosen. The beginner will usually find that he can reduce some of his earlier orders to half their original length, both by omitting unnecessary matter and by better choice of words, and have clearer and better orders.

Three excellent general rules have been enunciated as to what should be included in orders:

1. Give to your subordinates so much information and such instructions as necessary to insure that they will intelligently carry out your wishes—and no more.
2. Do not trespass on the province of a subordinate. The order should contain everything that is beyond his independent authority or individual responsibility, and nothing more.
3. Tell your subordinates exactly what you want them to do, but not *how* to do it.

Regulations and customs of the service. Routine matters. In a well-trained army there are a vast number of things that officers and men do without specific orders, largely as a matter of habit or second nature. Some of these are "customs of the service" which may not exist in written form, but are learned by association. Others are prescribed in "general orders" or "regulations," and are in force at all times unless otherwise specially ordered.

It should manifestly be unnecessary to repeat or even to call attention to these matters in field orders. An officer commanding a platoon should be familiar with the tactics of the platoon. He should know, for example, what formations to adopt if he suddenly comes under artillery fire. It should not be necessary to tell him anything about the way to handle his platoon. That is his authority, and to give him orders on the subject would be "trespassing on his province." The purpose of an order to a platoon leader is *not* to instruct him in the tactics of the platoon.

A certain amount of ammunition is prescribed for infantry troops entering battle. Every subordinate leader, even the soldiers themselves should know this, and all co-operate to see that the proper amount is carried. There are certain officers charged with the care and issue of ammunition. It should not be necessary for the division commander to concern himself with these matters, unless he desires that more or less than the usual amounts should be carried.

When we give orders to well-trained troops we concern ourselves only with the operation in hand, knowing that all will observe the usual routine, and that all subordinates are fully competent to lead their own units. The orders may accordingly be brief and free from instructions or precautions as to matters of custom.

With green troops, however, the situation is quite different. It has been found by experience that they frequently cannot be depended upon to observe the simplest regulations unless their attention is repeatedly invited thereto. In this case the position of the commander is embarrassing. He hesitates to clutter his tactical orders with matters of routine. Yet he knows by experience that his troops are very apt to neglect them. This situation can be overcome only by training. Faults which are general in the command should be corrected during the training periods between operations, and should be made the subject of general orders, memoranda or circulars.

Trespassing on the province of a subordinate. Since orders should not trespass upon the province of a subordinate, the orders of larger units will contain less detail, though they cover a larger field, than those of small units. A brigade commander has a larger province and far more independence of action than a platoon leader. The orders issued to him should accordingly contain less detail.

Information and instructions. The amount of *information* contained in an order, as distinguished from detailed *instructions*, will usually increase with the size of the command. A division commander should know the mission of his army and corps, and the missions of the divisions on his flanks. He should be given such information as is available concerning the enemy on the entire corps front at least. A platoon leader is not directly concerned with the plans of the division commander, but only with the enemy in his own front, and the platoons adjacent to him.

The information possessed by officers is of course not limited to that conveyed in orders. It is the custom to issue intelligence bulletins in each organization, containing such information as is of importance to those organizations. All subordinate commanders should be familiar with the contents of such bulletins. Conferences

take place constantly between all commanders and their immediate subordinates, by means of which information is circulated. It is accordingly unnecessary for the commander to include in his orders *detailed* information which he knows his subordinates already possess. New information bearing on their duties should be given, together with a summary of the previous information which the commander believes to have an important bearing on the operation in hand.

Eulogies or congratulations to the troops should be the subject of general orders rather than field orders. However, information which tends to raise the morale of the command may properly be included in field orders. Bad news should be touched on lightly or omitted altogether. It may be communicated to certain subordinates in conference, when necessary for their guidance.

Provisions for the Future.

A very important reason why the orders of higher commanders cannot enter into detail is that they must provide for future events, whereas the orders of a platoon leader are given as the event arises. A commander who attempts to prescribe the details of future events is certain to find himself a bad prophet. It will be necessary for him to countermand or correct his orders, or his subordinates will find it necessary to disregard details in the case of events which were not or could not have been foreseen. This tends to develop the bad habit of disobeying orders.

The orders of an army must of necessity provide for operations days or even weeks into the future. They should accordingly be limited to a general outline of the plan, and the necessary detailed instructions for initiating the operation. Other detailed orders, in accordance with the announced plan, will be issued as required to meet the various situations that arise, and the very objectionable counter-orders are thus avoided.

It is the rule, therefore, that orders or at least detailed orders, should never look farther into the future than is absolutely necessary. In the small infantry units, where the leader is at all times present with his command, orders are generally issued for immediate execution to meet each situation as it arises.

SEVENTH LESSON.

ORDERS (Continued).

Form and Structure of Orders.

An order which is in agreement with the plan it is supposed to put into execution, which is clear, decisive, brief and unequivocal, and which contains no unnecessary arguments and omits no essential information, would be a good order. But two such orders written to cover the same situation by two persons, might differ very widely in both terminology, form and arrangement. For military purposes it is necessary that orders, in addition to being well expressed, should be *standardized* as to verbiage or terminology, form and arrangement. The advantages of such standardization will be evident. The amount of detail that should appear in an order and the advantages of using military terminology we have heretofore discussed.

Uniform and systematic arrangement. Forms. The advantages of a systematic arrangement in accordance with a form, will be equally apparent. Orders which are logically arranged are easier to prepare, important matters are less apt to be overlooked, and the orders are more easily understood by those who read them. It is desirable, of course, that the same form be used throughout the army. A variety of forms, even though each was good and logical, would be confusing.

A form for tactical or field orders must be sufficiently detailed and rigid to insure a systematic presentation of everything essential to an order, and yet sufficiently elastic and adaptable to cover any situation that may arise. Such a form was devised for the American Army prior to the World War, and the experiences of

that conflict, both those in which the form was used, and those in which it was not, have amply proven its value.

There are, or have been, experienced officers who maintain that tactical orders are so varied in their nature that they cannot always be written according to any set form. It is believed that experience has disproved this contention. There is room enough for confusion in military operations, and the procedure should be standardized wherever possible without unduly restricting the judgment and initiative of leaders. There is no place where standard procedure is more effectively applied than in the writing of orders.

The Standard 5-Paragraph Order.

The form for field orders in use in our army is generally known as the "standard 5-paragraph order." It is adaptable to practically all situations and to units of every size from a patrol to an army. A tactical decision so complicated that it cannot be clearly set forth in a standard 5-paragraph order, should properly be regarded with suspicion. The use of the standard order tends to simplify tactical plans, and the simplest plan is always to be desired as it has the best prospects of success.

Parts of an Order. Contents of Paragraphs.

The standard field order consists of a heading, a body of 5 paragraphs, and an ending. In some orders, notably for marches and outposts, a distribution of troops may be included in the body of the order. It is usually placed in the margin in printed or typewritten orders, and between Pars. 2 and 3 in orders written by hand or taken down from dictation.

The *heading* includes the name of the organization or headquarters issuing the order, the place, date and hour of issue, the class of order and its serial identification number, and a descriptive list of any standard or special maps referred to in the order, or necessary in its interpretation.

The *body* of the order includes the distribution of troops (if used) and five numbered paragraphs of information and instructions, each containing such lettered sub-paragraphs as necessary for clearness and systematic presentation.

Par. 1. This contains essential information with reference to the enemy and our own forces. Each of these should be given separately, lettered sub-paragraphs (*a*) and (*b*), being used if desired. This information should not take the form of an intelligence bulletin, nor should it be a mere repetition of Par. 1 of the orders of higher authority. Each commander should write his own order, and include in Par. 1 the information his own subordinates will need. A small unit will not be immediately concerned with the general situation on the entire front, and to include such information would tend towards confusion and would detract attention from important details. A small unit, however, will be much concerned with other small units, both friendly and hostile, in its own locality and with which it is or may be in contact, and such information should be included for its guidance.

Par. 2. This contains in outline or general statement, the *plan of action* of the commander issuing the order. As in the case of Par. 1 it should not be a mere repetition of the orders of the next superior, but should set forth the mission of the command as a whole, and the decision of the commander based upon his own estimate of the situation. It is of the utmost importance that subordinates should know the mission of the command, as it must be the guide for their actions if they are confronted with emergencies not contemplated in their own orders as given in Par. 3.

Par. 3. This paragraph contains detailed instructions as to exactly what is to be done by each component organization of the command. For example, the attack order of a battalion would prescribe in succession the duties of each company, and of any attached or supporting troops under the control of the battalion commander. In an advance guard order the component elements would be the support and

reserve, in an outpost order the duties of each support or detached post, and of the reserve would be prescribed.

All instructions pertaining to any one unit are placed together, each such unit having a sub-paragraph, these being lettered successively with the first letters of the alphabet, a, b, c, etc. Thus in a division attack order Par. 3 (a) would refer to the 1st or leading infantry brigade, Par. 3 (b) to the 2nd infantry brigade, Par. 3 (c) to the artillery, etc.

In order to avoid repetitions, instructions pertaining to several or all of the component elements of the command may be grouped in sub-paragraphs lettered with the last letters of the alphabet, x, y, z.

Par. 4. This paragraph contains administrative instructions immediately connected with tactical operations, covering such matters as supply, transportation, movement of trains, traffic control, disposition of wounded and prisoners, etc. Routine administrative matters not directly connected with the operation in question, should not be included in this paragraph.

Par. 5. This paragraph covers all matters relating to intercommunication. It would prescribe the duties of the signal troops, lines of information to be established, codes and signals to be used, location or successive locations of the command posts of superior and subordinate units, etc. In a very small command this paragraph might include simply a statement of the place where the command would be found, or where messages for him might be sent.

The *ending* of the order includes the authentication or signature, and the distribution. The order may be signed by the commander himself, or it may be authenticated: "By order (or command—in case of a general officer) of . . . , " and signed by a staff officer. Custom varies in this respect, and it is a matter of no great importance, as the commander is the responsible person in any case.

Distribution. Following the signature is a notation showing the subordinates to whom the order is issued. This may be a matter of routine. For example, "normal distribution," or "Distribution A," would mean certain definite schedules, "Distribution B," a special schedule, etc. In the case of large commands issuing printed or mimeographed orders, routine distribution sheets showing the schedules, may be issued with the orders, thus: — copies to C. O. 1st Inf. Brig., etc. There may be a list by name or by office, of the various subordinates, and each may be required to acknowledge receipt of his copy, and indicate time of receipt by placing the time and his initials opposite his name or designation on the retained copy, or distribution list. When necessary the manner of distribution may also be indicated, for example: "Dictated to — and —; copy by mounted messenger to —." It is of course of vital importance that the commander or a responsible staff officer should make certain that the order is actually received by every principal subordinate charged with any responsibility for its execution. Copies or synopses of important orders should be sent to the next immediate superior, and this should be indicated on the distribution list, thus: "Synopsis by telegraph to division commander at —."

Omitted paragraphs. In the orders of small commands certain paragraphs of the complete standard order may be omitted, notably Par. 4 in the case of an organization having no trains. The other paragraphs may be re-numbered, but it is better to put in all the numbers and leave the omitted paragraphs blank, in order to preserve the form, thus:

1. No further information of the enemy or our own troops.
4. No instructions.

Administrative orders do not follow the 5-paragraph form of field orders. They should nevertheless be arranged in a systematic manner, with heading, paragraphed body, and ending.

Field orders are numbered serially in chronological order in each command. The series of numbers may run for a calendar year, or for the duration of the war.

Outlines for orders on the standard form and a number of examples of typical orders, will be found in the Appendix and throughout the text.

Annexes.

The sub-paragraphs of Par. 3 of the field order of a large command which deal with operations of the auxiliary arms, should be in sufficient detail to show the part that these arms play in the team as a whole. That is to say, they should contain so much information as is necessary to ensure proper co-operation between the infantry and the auxiliary arms. The mission of the auxiliary, with its assignments, positions and general duties, will ordinarily be sufficient.

Based on these orders, the commanders of the auxiliary arms prepare field orders for their own commands, in the same manner that the infantry brigade commanders, for example, prepare orders for their subordinates. When practicable these field orders of the auxiliaries are attached to the field order of the higher unit, and issued with it as "annexes." In this way a better co-operation is insured, without too much detail in the principal field order.

Administrative Orders.

Par. 4 of the field order contains necessary general plans relating to routes of communication, supply, traffic control, disposition of wounded and prisoners, and other administrative matters. Detailed instructions are included in an "annex" to Par. 4, or in an "administrative order," attached to and issued with the field order.

Annexes and administrative orders are seldom issued by commands less than a division, the necessary instructions being all included in the field orders. In division and higher commands they are usually issued with the first field order for an attack, if sufficient time in preparation is allowed. In the subsequent operations time will often not permit the issue of complete annexes, and any changes in the plans for the auxiliary arms are announced at the proper places in subsequent field orders.

Maps. Tables.

Map references in field orders should be limited if practicable to the standard maps in the possession of the subordinates to whom the orders are issued. In this case maps need not accompany the orders. It will often, in the case of large units, be necessary to prepare special maps for certain operations. These would show troop dispositions, zones of action, defensive works, traffic routes, etc. Lack of time and facilities will usually make it impossible to produce enough copies of these special maps to accompany each copy of the order. In such case a limited number are issued to those who will most need them, and copies should be posted in various headquarters where subordinates may consult them. Combat orders of the small infantry units must ordinarily include no map references, and be based upon the terrain alone.

Orders of large units may often be simplified by the use of tables or graphic charts as annexes to the orders. These would include march, entraining, relief and outpost tables, march graphics, etc.

Orders for the smaller units should never be issued from a map alone. An examination or reconnaissance of the terrain should always be made.

Conferences.

We have pointed out that orders should be free from argument, discussion and explanation. If explanations be considered necessary in any case they should be given in a conference between the commander and the subordinate or subordinates concerned, at the time of or immediately following the issue of the order. In the case of the small units the leader, having given his orders, will usually conclude by asking, "any questions?"

It should be distinctly understood that such conferences are for the purpose of clearing up any doubtful points in the order, and not to allow criticisms of the commander's plan, or to develop discussions and arguments. As to whether reasons for orders shall be explained, this is a matter for the commander to decide. The fact that he has ordered certain things done should be sufficient to insure their loyal

performance by all subordinates. During training, explanation of the reasons for things should be the rule. During actual operations it should be and will be the exception.

When references are made to localities shown on available maps these should be pointed out to subordinate leaders.

In the case of smaller forces, issuing dictated or verbal orders, the conference (if any) takes place at the time of issue of the orders. It is desirable that the conference be held at a place of observation affording a view of the terrain on which the operation is to take place, the commander pointing out on the ground the localities referred to in his order.

Time of Issue of Orders. Time Required for Circulation.

The time at which orders should be issued is a matter of importance calling for the exercise of good judgment. In view of the ever-present possibility of a change of the situation which may require a change of plan, orders should evidently be issued no earlier than necessary. It is difficult enough to plan for the present and impossible to plan far into the future, so far as tactical operations are concerned.

In general the smaller the unit the less the time between the issue and the execution of orders. The orders of a section in combat are issued for immediate execution. Those of an army must necessarily be issued hours or even days in advance of execution.

An order must reach all concerned, in ample time to permit them to digest its contents and make any necessary preparations to carry it out. It is to be remembered that a division does not issue orders to its infantry platoons. The orders of higher command pass down to the next lower commanders only, who in turn must study these orders, estimate the situation, issue and distribute orders to *their* subordinates, and this continues through the chain of command down to the individual soldier.

Experience during the World War indicates that at least the following time should be allowed for the complete distribution of orders, from the instant of signature by the higher commander:

In a regiment, $1\frac{1}{2}$ hours.

In a brigade, 3 hours.

In a division, 6 hours.

In some cases much more time may be necessary. The necessary time must be learned by experience.

Complicated orders should not be issued late at night, usually not after 11.00 p. m. If they cannot be issued prior to that hour it will be better, if possible, to wait until the following morning.

The circulation of orders may often be expedited by a preliminary or warning order, which permits certain necessary preparations to be made.

Superior commanders may also outline their plans in conference with their immediate subordinates, in advance of the issue of the formal order. This enables the subordinates to estimate the situation and make certain preparations. Every commander or leader, of whatever rank, should keep his second in command or a trusted staff officer advised in a general way of his plans for the future, as a precaution in the event that a change of command becomes necessary.

Verbal Orders.

As verbal orders (including commands and signals) will be the almost invariable form in the small infantry units, their importance warrants a few remarks.

It is more difficult to give a good verbal order than a good written order. A written order may be studied, and errors or omissions corrected before it is issued. In the case of a verbal order, however, the leader must be quite clear in his own mind as to exactly what he is going to say, before he opens his mouth. If he stumbles through his order, repeating and correcting himself as he proceeds, he is very apt to be misunderstood, and certain to undermine the confidence of his subordinates. On the other hand a good verbal order has a more stimulating effect

on those who receive it than any written order could possibly have. There is no surer indication of the training and capacity of a leader than his verbal orders—and this is instinctively felt by all who listen to him. If the leader knows the game and is sure of himself, the language and tone of his verbal orders will show it, and inspire the confidence of his men.

Verbal orders should follow the same form and sequence as written orders, should contain the same information and instructions, and be couched in the same language, except that they will take a more conversational form, including the use of the pronouns I and you, etc.

A verbal order has no heading nor ending, or rather these are contained in the person of the leader and the time and place of issue. Neither the order nor its paragraphs are numbered. If a map be available the leader will point out localities, if this be necessary to a clear understanding.

If the order be relatively long the leader should make notes of what he wishes to say, and may cause his subordinates to take notes, in which case it becomes practically a dictated order.

Thus the order of a sergeant leading the point of an advance guard, might be as follows:

(Par. 1.) "It was reported last night that the enemy had a battalion at South Plattsburgh, 6 miles down this road. Our company is the advance guard, our platoon the advance party. We march at 8.30, five minutes from now."

(Par. 2.) "We are the point. We march on this main road, keeping 200 yards ahead of the advance party."

(Par. 3.) "Jones, you will lead. Take the right of the road and observe to the front and right. Wilson, follow Jones at about 10 yards on the other side of the road, and observe to the front and left, etc."

(Par. 4.) (No administrative details in this case.)

(Par. 5.) "I will follow Wilson at about 10 yards."

In this case Par. 4 is omitted. In other cases all but Par. 3 might be omitted. For example, if a hostile aeroplane should appear, the sergeant would estimate the situation and order and signal: "Halt. Lie down. In the ditches."

Various examples of verbal orders will be found herein and in the course of Musketry. Others will be found in the problems issued by the various service schools.

EIGHTH LESSON.

GENERAL PROBLEMS OF THE ATTACK.

The problems which confront the attacker in carrying out his mission, are many and various. Each of them is interwoven with all the others in such manner that it is impossible to consider them separately. We will therefore consider them collectively, pointing out their intimate relation, and, finally, the principles and methods applicable to their solution.

1. *Intelligence.* Inasmuch as all his operations must be based on a knowledge of the situation which confronts him, the first problem of the attacker is that of *intelligence* or *information*. The number of things that must be known by those who plan the operations of a great army are so many that a mere list of them would fill a volume. There are two grand sub-divisions of intelligence, first, all those things which pertain to our own forces, and, second, those which pertain to the enemy. The former should be accurately known (though too often they are not). The latter are always matters of more or less uncertainty.

2. *Plans and orders.* Based upon his information, the attacker must prepare his plans of operation and the orders necessary to carry out these plans.

3. *Concentration of force.* Victory is won by the *concentration of superior force* at the critical or decisive point or points. Accordingly the concentration of his forces, including troops, material and supplies, is an early and important problem of the attacker.

4. *Movement of troops and supplies.* The concentration of forces involves problems of *movement*, of troops and supplies, including routes and vehicles and all that pertains thereto, and marches by troops.

5. *Surprise.* If the enemy be aware of the concentration or intended concentration of force, he in turn can and will concentrate his own forces at the critical locality, and may be able to defeat the aims of the attacker. It is accordingly highly important that the attack be delivered as a *surprise*.

6. *Deployment.* The attacker's troops will arrive at the locality selected for concentration in the column formations employed in the route movements of troops. Such formations are quite unsuitable for battle. So the attacker, having effected his concentration, is next confronted with the problem of *deployment* or suitable distribution of his troops in battle formation.

7. *Fire and movement in battle.* Modern combat consist essentially in the advance of the attacker's infantry against the defender and into the terrain which he occupies. This advance is made possible by the fire of all the attacker's weapons. The attack is accordingly a combination of *fire and movement*. These two means must be intelligently combined to achieve the ultimate aim of battle, to push manpower forward into the enemy's position and ultimately break down his resistance by the shock or threatened shock of personal contact.

8. *Co-ordination, control and direction.* In order that the attacker's power may be effectively applied to the accomplishment of his purpose, it is necessary that his forces be properly *co-ordinated, controlled, and directed* at every stage of the combat. This is effected through the medium of organization and the hierarchy of command, and involves many subsidiary problems, including intelligence service, intercommunication, the preparation of correct plans, issue of orders, etc.

9. *Continuity of the attack.* Modern combat between large forces seldom consists in a single clash of the two opponents, in which the issue of battle is decided in a few hours. The attacker, having seized the initiative, can retain it only by persistent aggressiveness. Usually, therefore, he is confronted with the problem of a *continued action, a sustained effort*, extending over days or, with occasional lulls in the action, over weeks and even months. Modern military organization and tactics are in great measure based upon the requirement of continuity of effort.

10. *The assault.* The attack which progresses by fire and movement, logically culminates in an *assault* of the enemy in his position, involving the shock of personal contact between the opposing forces. The fire of all weapons and the maneuver of the infantry, are conducted in such manner as to prepare the way for the assault which clinches the victory. The assault will never be simultaneous along an extended front, but will be delivered here and there by the smaller units as opportunity is offered.

11. *Exploitation.* The mere defeat of the opposing forces is not the sole aim of the attacker. He is not like the boxer who is content to win a technical decision "on points," but seeks to administer a "knock-out." The purpose of war is to impose our will upon the enemy, and this is ordinarily accomplished by completely breaking down his resistance, that is, destroying his armed forces. Accordingly, the attacker, having driven the enemy from his position, must *exploit his success* by inflicting all possible damage upon his defeated opponent. This exploitation will be both local and general. Local successes should be promptly followed up by utilizing the supports and reserves of the smaller units. When the enemy gives way on an extended front the general reserves are employed to exploit the success. This is accomplished by means of a prompt and vigorous *pursuit*.

12. *Security.* The defender, unless hopelessly outnumbered and outclassed, may be expected to oppose a stout resistance to the attack. And he will not limit himself to merely firing upon the attacker's troops during their advance. He will be constantly on the lookout for and will take prompt advantage of any opportunity

for aggressive action in the form of counter attack. The attacker, therefore, at every stage of the combat, is confronted with the problem of providing *security* for his troops against both the fire and counter attack of the defense. Many things are involved in the provision of security.

13. *Reinforcement and supply.* Modern combat consumes both men and material at a rapid rate. The attacker must provide for the continual replacement of killed, wounded and especially exhausted men, by a stream of fresh troops. He must also provide the necessary supplies, especially ammunition, water and food, and arrange for their transportation and delivery in such quantities and at such times and places as they may be required by the troops.

14. *Evacuation of wounded and prisoners.* Not the least important of the problems of the attack is the collection and movement to the rear of wounded and prisoners, known as *evacuation*.

Each of these larger problems involves many considerations, some of them of great importance in themselves. In their solution we apply certain principles and methods based upon long experience. Let us now consider these principles and their concrete application to the problems we have stated.

PRINCIPLES OF OFFENSIVE COMBAT, AND THEIR APPLICATION TO THE PROBLEMS OF THE ATTACK.

Principles of the art of war not rigid. Warfare is far from being a precise science. There is probably no other line of human endeavor which is less subject to fixed rules and rigid methods of procedure. And this is especially true of combat—the most important operation of war.

The rules and principles of war or tactics, such as they are, are common sense based upon experience and precedent. It has been found that a certain method of procedure has repeatedly given good results in certain situations. From this we deduce a principle for our own guidance in similar situations. But no two situations are ever exactly alike. An apparently insignificant difference in the situation may call for radically different methods of procedure.

Accordingly, the principles of the art of war are usually stated in very general terms, accompanied by the cautions that the proper procedure “depends upon circumstances,” that we “must keep aloof from rigid forms or models,” and that “there is no such thing as a ‘normal’ formation,” etc.

Principles thus stated in general and indefinite terms make comparatively little impression on the mind of a student not previously familiar with the subject. They give rise to a desire for more specific information which can be used as an actual guide to one's conduct. Also the student will not fail to note that some of the principles are apparently in violent conflict with each other. This does not mean that any of them is wrong. But it does mean that when confronted with an actual situation the commander must decide which of two or more conflicting principles is applicable. That is to say, a knowledge of the principles cannot take the place of judgment, common sense and reasoning power in meeting an emergency. This knowledge should serve as a guide to one's actions, not as restriction upon them.

Good Practice in Tactics.

Whatever one undertakes he should be familiar with the methods that have come to be recognized as “good practice” in that particular line of endeavor. This knowledge serves as a guide, but in meeting his own situations one will never proceed in exactly the same manner as somebody else in the past. There is always more than one, and there are often many solutions to a military problem. Any one of several different lines of procedure may produce satisfactory results if vigorously carried out.

One writer has stated that “the principles of the art of war are enunciated in order that we may understand the risk that we take in violating them.” To this we

may add that a smashing of rules and a violation of precedent is in itself an important principle of the art of war. But if we apparently violate a rule we should do so with a full knowledge of the probable consequences as to success or failure, and not merely because we did not know the rule.

Risk is inherent in all the operations of war. Decisive results are usually obtained only by radical procedure. The commander who never takes any risks will never achieve decisive results. He not only risks failure but courts it. The old saying that "fortune favors the bold," is specially applicable to military operations.

These are important principles of the art of war which overlie all other principles. But when we take a risk we should know just how much risk we are taking. We should know the relative probability of success or failure and the probable results of each. We should balance these against each other in deciding to take or not to take the risk. And we should take all the necessary precautions to increase the results of success and minimize those of failure. The commander who takes great risks merely because he is ignorant that he is taking risks, and who likewise because of ignorance, fails to take precautions against the consequences of failure, is sure to come to grief.

Essential Qualities of Commanders.

Caution and boldness are necessary characteristics of the successful commander. They are by no means inconsistent, but each is essential to the other. To win success we must proceed boldly, taking all necessary precautions. On the other hand timidity and foolhardiness are most undesirable qualities, either of which will bring on disaster. Either is apt to be the result of ignorance. A weak character will be afraid to venture on the unknown, and will accomplish nothing. A strong character will take unwarranted and foolish risks. A knowledge of the game is the safeguard. It substitutes boldness and caution for rashness and timidity.

The risks apparently taken by successful commanders are really not so risky as they appear. They are simply the positive measures of strong characters, based on a thorough knowledge of the art of war. At the close of one of the combats in the Meuse-Argonne, one of the brigades of an American division was formed in column of route and boldly marched several miles into territory occupied (but not *held*) by the enemy. This was apparently a violation of several principles relating to dispersion, security of the flanks, moving in column through a zone of artillery and machine gun fire, etc. But the commander correctly judged that these principles were not applicable to the situation. He was guided by the principles that when an enemy is disorganized and in retreat it is safe to adopt measures that would be suicidal in the face of a watchful foe whose fighting power was unimpaired, and that only by vigorous measures of pursuit can the full fruits of victory be reaped.

The commander should be familiar with methods of good practice in the art of war. This knowledge will guide him in reaching an intelligent decision in any situation which confront him. He should be able to correctly judge the relative chances of success or failure in any proposed line of procedure, and the probable relative consequences of each. He should know that inaction usually involves grave risk. He should act with boldness, based upon knowledge and experience, and tempered and controlled by prudence and caution. And he must realize that in war success is the only criterion. If he fails to achieve results no excuses that he obeyed orders or followed the "rules" can be accepted. In war it is not simple obedience to orders that is demanded, but *results*. This is the most important of all principles.

The principles of the art of war are not mathematically rigid rules. They are elastic, and their correct interpretation and application requires a high degree of judgment. There is no complete precedent for any military situation, but there are always precedents which serve to guide us, and these have been epitomized as the principles of the art of war.

Latitude allowed commanders of different grades. The amount of latitude allowed in the exercise of judgment and initiative by a commander varies directly as his rank. The battle formations of a unit become more complex and less subject

to rule as the size of the unit increases. While the initiative of subordinates should not be unduly cramped, yet on the other hand uniformity of tactical doctrines and methods throughout the army is most necessary. The initiative exercised by a subordinate must be within the limits appropriate to his rank. Standard formations and methods are prescribed so far as it is wise and practicable to do so, thus insuring uniformity and eliminating *unnecessary* and *undesirable* exercise of judgment by subordinates. We find that the formations of the squad are quite rigidly prescribed in the drill regulations, those of the battalion are merely outlined, and when we come to the army we find no prescribed formation, the matter being left entirely to the judgment of the commander.

Tactics Dependent Upon the Weapons Employed.

A very casual study of the development of the art of war will show that tactical methods have always been, in large measure, dependent upon the weapons in vogue at any particular time. Nevertheless we are frequently told that certain fundamental principles of warfare are eternal, that they do not change with time and the development of weapons—that it is only the methods of applying them that change. The reason for this, which the leader of troops will do well to remember, is that the principal weapon employed in warfare is the human machine—man himself. The most important principles of the art are those which are based upon the characteristics or peculiarities of this living weapon. Mechanical weapons change and develop, but the nature of man has not changed and will not change. That is why the most important principles are eternal—they are based upon the characteristics of an unchangeable weapon.

Principles applicable to forces of any size. In general the principles of the art of war are applicable to forces of any size. Many of them apply even to the conduct of the individual soldier.

Let us now consider, somewhat more in detail, the general problems of the attack to which we have heretofore referred.

INTELLIGENCE.

Intelligence or information is the basis of all plans for military operations, from those of the individual soldier in combat, to those of an army.

The usual sources of intelligence are: The air service, including aerial photography, reconnaissance by all arms, observation from fixed stations, prisoners of war, spies, local inhabitants, maps, captured maps and documents, captured material, newspapers, etc.

The collection of information is a continuous process. As the situation is constantly changing in most of its aspects, fresh intelligence is constantly required. It is necessary not only as a basis for preliminary plans, but as a guide for the conduct of every phase of operations.

The information at the disposal of higher commanders is a mosaic composed of the various bits of intelligence received from all sources. An apparently trivial fact may be of the utmost importance when considered in connection with other facts. Thus the finding of a certain insignia may indicate to the higher command the presence of a certain hostile division in a certain locality. As the value of any particular piece of news may sometimes be appreciated only by those who see the picture as a whole, all information of whatever nature should be transmitted to the higher commands with a promptness depending upon its probable importance. Conversely intelligence which may be of value to the smaller organization is transmitted to them in the form of daily intelligence reports or bulletins from the higher headquarters, or by special messenger when sufficiently urgent.

The most important information concerning the enemy, from a tactical point of view, is that which concerns the strength and composition of his forces in any locality, their position, especially the location of their flanks, and the nature and extent of their defensive organization.

The information concerning the enemy may be quite detailed, as on a stabilized front where the opposing forces have been long in contact, or it may be almost totally lacking, as in the case of an unexpected meeting of two opposing forces in open warfare. Often important information will be obtained only after the opening of an attack. Attacks made for the express purpose of gaining information of the enemy are sometimes called reconnaissance in force. They will usually develop the situation promptly. A large proportion of the available force should not be committed to an attack until the situation is reasonably clear as a result of reconnaissance. The information of the enemy will always be incomplete, but every effort should be made to obtain all that is possible.

PLANS AND ORDERS.

Every operation should be conducted in accordance with a carefully prepared plan, based on the best obtainable information, and promulgated to the command by definite orders.

Planning and the issuance of orders are a continuous process. The plans prepared and order issued prior to an attack can do no more than assemble the troops and material and initiate the combat. Further plans and orders must be contingent upon developments.

Plans for military operations should be of the simplest nature. Simplicity is the keynote of sane tactical procedure. Only the simplest plans can be successfully carried out in the confusion incident to combat—complicated measures invite disaster.

Plans and orders must be clean cut and definite. Indecision, irresolution or half-hearted measures are fatal. A commander should never attempt to "straddle" a situation or remain "on the fence," but must decide definitely to do one thing or another. And having decided upon his plan he should stick to it until it is accomplished or until it has become evident that its accomplishment is impossible. Unnecessary changes of plan destroy the confidence of subordinates and produce confusion. If the commander is undecided, his indecision will be soon communicated to those under him.

Orders should provide a clear and definite mission for every fraction of the command. (See the subjects Estimate of the Situation and Orders.)

CONCENTRATION OF FORCE.

Decisive results are achieved only by the offensive, and a successful offensive implies a concentration of superior force at the point of attack, whatever may be the situation at other localities. Indeed the chief aim of the defensive should be to economize forces in order to make troops available for offensive action in other places.

Superior force usually implies superior numbers, though there are other important elements of superiority, chief of which are the quality of troops, morale and leadership, and nature of equipment, especially in such items as artillery, air service and tanks. Good troops can defeat an enemy greatly superior in numbers, but lacking in training, equipment, discipline, leadership, and above all in *the will to conquer*—as history amply proves. Good troops are skilled in maneuver, whereas green troops are often impossible to maneuver in the face of the enemy. Good troops can make long marches and arrive on the battlefield ready and fit for combat, whereas a few forced marches will disintegrate poor troops. Accordingly, in the concentration of force, mobility or the power of maneuver, will often more than compensate for inferiority of numbers.

The principle of the concentration of force is applicable to units of any size. The platoon overcomes a hostile resistance by intelligently maneuvering its two sections and bringing their combined fire power to bear. Concentration of force is the aim of all tactics, on both a small and a large scale.

The mere assembly of masses of troops and supplies in one locality does not alone constitute a concentration of force. The force must be intelligently applied, and certain common mistakes avoided.

The principle of the integrity of tactical units should be observed. That is to say, a tactical organization should be held together and employed as a unit whenever possible. Do not split up a platoon, a company, or even a battalion unless imperatively necessary. A platoon is something more than six squads. A regiment acting as a unit is a more effective force than three separate battalions. A mixed unit cannot possibly have the esprit, morale or discipline of a permanent unit under its proper commander. It is not so easily controlled nor so effective in battle. Three platoons, attacking in different localities, cannot achieve the results which would be obtained by the same forces concentrating their efforts *as a company*.

In every situation of a large command, and often in those of a small command acting alone, there will be several missions to perform. One of these will always be of paramount importance. The commander should cleave to the main idea and not fritter away his force by trying to accomplish too many things at once. As many troops as possible should be assigned to the principal mission, as few as possible to necessary subordinate missions, and relatively unimportant missions postponed or abandoned. A small unit especially (a platoon, for example) can have but one mission. It cannot strike effectively in more than one place at a time. Combats which offer little prospect of success, or which have no bearing on the general plan, are to be avoided. Success in one great battle will carry with it all minor achievements and compensate for all minor defeats.

The reverse of concentration is dispersion. A mere separation of the parts of a command is not necessarily dispersion, for troops must be distributed for combat. They should not be so massed as to incur undue risk of losses from hostile fire or counter attack, or to prevent freedom of maneuver. A force is unduly dispersed when its elements are so separated by distance, obstacles or lack of intercommunication, that they cannot effectively co-operate in the accomplishment of their common mission, or support each other in case of emergency. The smaller the force the greater the danger involved in dispersion. A division separated from its corps can maintain itself for a considerable time, even against a greatly superior force. A platoon separated from its company is promptly overwhelmed.

Detachments during battle, or when battle is expected, are to be avoided. As a rule the only detachments which are justifiable are those which "contain" relatively larger forces of the enemy, keeping them out of the main battle; or those which cover the flanks or the line of retreat, or otherwise provide necessary security for the force. When a battle opens all detachments other than the above should rejoin the main body, "march to the sound of the guns"; unless they have express orders not to do so.

MOVEMENT OF TROOPS AND SUPPLIES.

The concentration of force on the vast scale demanded by modern war requires the use of mechanical transport—railroad and motor truck. Except for movements on a small scale and over short distances, these means are habitually employed in conjunction with movements by marching.

Movements by rail or truck cannot, of course, be conducted in the near presence of the enemy. Accordingly, the troops are delivered at a detraining point a safe distance from the front, whence they proceed by marching. If the front be already strongly held by troops in position, reinforcements may be detrained close thereto. But if there be no covering troops other than cavalry and small detached forces, the detraining point must of course be much farther to the rear.

The location and capacity of the roads and railroads will accordingly exercise a great influence on the selection of the point of attack and the plans for concentration. As the capacity of the routes of transportation is frequently inadequate for large concentrations, carefully prepared schedules of movement are necessary, in order to utilize existing routes to the best possible advantage.

SURPRISE.

The element of surprise is usually essential to the success of an attack. Surprise is achieved by secrecy in preparation and vigor and rapidity in execution. The enemy must be prevented from gaining knowledge of the concentration. Movements of large bodies of troops by day can hardly escape detection by hostile air scouts, if the enemy has an adequate air force. Accordingly, concentrations of troops are, under such circumstances, accomplished by night movements, the troops being concealed in woods and villages by day. Small units take advantage of darkness, fog, woods or other natural cover to move forward unobserved.

An attack should be launched at such a time that there will be opportunity to complete it before darkness intervenes. Accordingly, daybreak is the favorite time for launching an attack, and this also allows the final preparations to be made under cover of darkness. Small forces require less time to complete an action, but if an attack be started late in the afternoon there may not be time to complete it, or the enemy, even if defeated, may be able to escape in the darkness.

The auxiliary arms, especially artillery and tanks, must be massed with the same precautions as to secrecy as in the case of the infantry. Unusual activities should be avoided. The artillery bombardment preceding the attack naturally gives notice of what is coming. Accordingly, it should usually be short and violent. The advantages of a long bombardment do not ordinarily compensate for the opportunity thus afforded the defender to reinforce his lines.

NINTH LESSON.**PRINCIPLES OF OFFENSIVE COMBAT (Continued).****DEPLOYMENT.**

The final approach to the battlefield, usually from a point of detrainment, is known as the approach march, and because of the near presence of the enemy must be made on foot.

The infantry moves to the battlefield in column of route and fights in line of skirmishers. The change from column to line of battle is called deployment, and the reverse maneuver is called assembly in column.

Progress, Maneuver and Control of Column and Line.

Large columns can utilize the roads for their movements, whereas lines of small columns (partial deployments), or of skirmishers, must move across country, which is slow, difficult and fatiguing. Premature deployment wastes time and unduly fatigues the troops. Also large columns are more easily controlled by the higher commanders, their direction of march is easily changed and they can readily be deployed, or otherwise maneuvered in any desired direction. A line of skirmishers, on the other hand, is very difficult to control and maneuver, even when it is not under hostile fire, the difficulty increasing rapidly with the size of the unit and frontage of deployment. As a rule it can do nothing except fire and move directly to the front or rear. Moreover it can fire only to the front or obliquely to the front, and cannot protect its own flanks. To effect even a slight change of direction is always difficult and often impossible. It is usually necessary to assemble the troops in column to accomplish a change of direction. On the other hand columns, especially large columns, are incapable of delivering effective fire, and they are extremely vulnerable to hostile fire of all kinds. Small columns are in all these respects, intermediate between large columns and line of skirmishers. They can make more rapid progress and are more easily controlled and maneuvered than a line of skirmishers, and on the other hand are less vulnerable to fire than large columns, and can themselves more promptly deploy and open fire. They constitute, in fact, a partial or preliminary deployment.

The usual route formation is the column of squads. The small columns employed in the approach to the firing position include column of twos or files (by company or platoon), section and squad columns, all as prescribed in drill regulations.

From the foregoing it follows that in approaching the battle position the infantry should remain in large columns of route, utilizing the roads allotted to it, as long as possible, as it can thus progress most rapidly. Upon entering the zone in which they are, or may be exposed to artillery or long-range machine gun fire, the troops partially deploy into lines of small columns at deploying intervals, decreasing in size as they approach the front. When it becomes necessary to open fire the leading troops, designated for the firing line, deploy as skirmishers, those in rear remaining in small columns, as a rule, until they likewise are ordered into the firing line. The successive maneuvers, up to the instant of deploying as skirmishers, constitute what is called the approach march, all of which is executed in columns of constantly decreasing size.

Time required to deploy a long column. A long column of route requires a considerable time to deploy, by reason of the great distance which troops in rear must march to reach the firing line, and the fact that much of the movement must usually be made off the roads. There is even danger in such a case that if the enemy be suddenly encountered the head of a long column might be defeated before the rear could come into action. In any event, a long time will be required to complete the deployment and launch the attack, and time is always of the greatest value in military operations.

Order of troops in column. Parallel columns. This difficulty is obviated in two ways. First, the troops in column should be arranged from front to rear in the order in which they will probably be needed. Those designated for the assault echelon should be well to the front, and the bulk of the artillery, trains (except the ammunition wagons of the small units) and non-combatant troops, in the rear of the column. Second, the approach march of a large unit should be made in several parallel columns of route, utilizing such roads as are available within the zone or front assigned to the unit. Even if a road to the front is not continuous it can be utilized by the infantry at least, occasional movements across country being necessary. Transport, which would have difficulties if off the road, can remain on the through routes. Several columns in the case of a large force greatly facilitate deployment. A force in two columns can deploy on a given front usually in less than half, often in much less than half, the time that would be required by the same force if in single column. In case of an encounter of opposing forces one which is already in several columns will have a great advantage over an equal or even a greater force in a single column.

If deployment to the flank is possible this is also facilitated by the advance in several columns. In such a case the column on the exposed flank, or both flanks if there be more than two columns, should consist chiefly of combatant troops, the bulk of the non-combatant troops and general trains being with the interior columns. The outer columns form flank guards for the main body.

It may not be advisable, however, for the infantry to utilize all available roads, thereby interfering with the necessary transport, which can move only by the roads. Accordingly, the infantry must often march across country.

When the locality, frontage and manner of deployment are known, the approach march should of course be arranged to facilitate such deployment.

Security. Maintenance of contact and direction. Each column must reconnoiter and cover its own front and flanks in the usual manner (except when moving up to an established or stabilized front), and maintain contact with adjacent columns. On approaching the deploying position this should be thoroughly reconnoitered before committing the troops to a deployment. The proper direction of advance must be maintained.

Thus the approach march and battle deployment of a large unit in mobile warfare would be about as follows: 1st stage, single column of route. 2nd stage, several parallel columns of route. 3rd stage, lines of small columns. 4th stage, one or more waves of skirmishers, followed by supports and reserves in lines of small columns.

Conduct under long range fire. Infantry cannot combat long range fire of artillery and machine guns. In the attack its fire, at ranges exceeding 1000 yards, is not sufficiently effective to warrant opening fire. It should therefore advance to within 1000 yards, preferably 800 yards and as much less as possible, before opening fire on the enemy. Accordingly, during the approach march the infantry has nothing to do except assume such formations as will reduce the effects of hostile fire, take advantage of such cover as is available and push on as rapidly as possible. The more rapidly it moves the less it will suffer, both because it will be more difficult for the hostile artillery to direct its fire, and because the time of exposure thereto will be less. If the infantry halts during the approach it offers a much better target to the hostile artillery. Accordingly, it should not halt if this can be avoided, and if compelled to halt should take cover.

Approach march to an occupied front. In approaching a battle front already organized or held by other troops, elaborate security measures will not be required, and the approach march is less formal. The movement should of course be kept secret. Even the troops should not be informed where they are going. They are moved by truck or rail, or by rail, truck and marching combined, to a detaining or assembly point some miles in rear of the line. Thence they are conducted by guides to the position, movements being habitually made at night. If they are to replace other troops for an attack, a screen of the latter should generally be left in position until the last moment in order that the enemy may not detect the arrival of fresh troops, by noting their activities in the trenches, capturing prisoners from amongst them, etc.

Details of the approach march of small units are treated under the discussion of the company and platoon, in the lessons following.

Depth and Density of Deployment.

Deployment, or extension of front, is necessary for the development of fire, and a unit is said to be deployed when it is delivering or ready to deliver fire. For the infantry this means a line of skirmishers at the front. The elements in rear of this line may be disposed as skirmishers, in lines of small columns or groups, or other suitable formations progressively increasing in size from front to rear, favoring control and maneuver, while evading the effects of hostile fire. The auxiliary arms are deployed in groups, amongst or in rear of the infantry, each group operating one or more of the auxiliary fire weapons.

Deployment must provide for both fire and maneuver and it is accordingly effected not only laterally (parallel to the front), but also in depth (from front to rear). The purpose of the lateral deployment is primarily the development of fire and support of the firing line. The purpose of deployment or organization in depth is: (a) To avoid losses from hostile fire; (b) to permit of maneuver; (c) to provide continuity of effort by sending forward fresh troops as needed; (d) to repel counter attack, protect the flanks and meet the other emergencies of combat.

The actual depth of deployment or distance from front to rear is determined by these conditions and the nature of the terrain. As a very rough rule it may be stated that the depth of deployment of a small infantry unit is approximately equal to the frontage of deployment, and that the depth increases relatively in larger units. There should be good reasons for any radical departure from this rule. The successive elements of deployment in depth are known as *echelons*. Thus we have the assault and support echelons of the company, the first and second echelons of the regiment, etc.

Density of deployment has reference to the number of combatants available per yard of front assigned to the unit. Thus if a platoon of 50 men be deployed on a front of 120 yards the density is $50/120 = 5/12$ men per yard. A company of 200 men deployed on a front of 250 yards would have a density of $200/250 = 4/5$ men per yard. If a division having 12,000 infantry be assigned a front of 2000 yards, the density of deployment would be $12,000/2000 = 6$ men per yard. This is a

suitable deployment for a division in a sustained attack. (In calculating density it is usual to consider only the infantry.) Density may also be expressed as so many yards of front per man, as follows: (Figures approximate only.)

| Unit | Strength | Deployed front | Men per yd. of front | Yards front per man |
|----------------|-----------------|------------------|----------------------|---------------------|
| Platoon | 50 men..... | 125 yards..... | $\frac{5}{125}$ | $2\frac{1}{2}$ |
| Company..... | 200 men..... | 250 yards..... | $\frac{1}{50}$ | $1\frac{1}{2}$ |
| Battalion..... | 800 men..... | 500 yards..... | $\frac{1}{80}$ | $1\frac{1}{8}$ |
| Regiment..... | 3,000 men..... | 1,000 yards..... | $\frac{1}{300}$ | $1\frac{1}{3}$ |
| Division..... | 12,000 men..... | 2,000 yards..... | $\frac{1}{600}$ | $1\frac{1}{6}$ |

It will be noted that the density of deployment increases progressively with the size of the unit.

Density depends only upon the strength of the unit and the front assigned to it.

Density of deployment is necessary to give power and continuity to the attack. The greater the resistance to be overcome and the deeper the penetration required, the greater must be the density of deployment. For an attack on savages a single line of riflemen at wide intervals would suffice. For penetration into a highly organized and strongly defended position a succession of impulses is necessary, and this requires a dense deployment. Holding, secondary or feint attacks require a less density than a decisive attack which is to be driven home. If a unit be over-extended, that is, deployed on too wide a front, the attack will lack power and continuity. If the deployment be on too narrow a front, full fire power cannot be developed, and maneuver may be hindered or cramped.

It will be apparent that there is no fixed relation between depth and density of deployment. Density has to do with the strength of the reserves, depth is determined only by their positions.

Details of deployment. The high command assigns to each of the larger units in the attack the front it is to cover, or more correctly the lane in which it advances, which is called its *zone of action*. The various units from the highest to the lowest, successively assign portions of their zones of action to their component units. Thus the regiment defines the zone of action of its front line battalions, the battalion assigns zones of action to its two assault companies. This progressive assignment of zones of action is necessary to insure proper co-ordination and covering of the entire front of the attack.

The assignment of a zone of action fixes the density of deployment of a unit and the initial strength of its reserves. A higher unit assigns zones of action to the next lower units, but usually leaves to them the details of deployment within the zones thus assigned, especially in the case of smaller units, who have less latitude in the matter of deployment, and are assumed to follow good practice. Thus a corps commander might decide whether his divisions should deploy with their brigades abreast, or one in rear of the other. A battalion commander would not ordinarily find it necessary to prescribe the manner in which his assault companies should deploy.

Depth and density of deployment are characteristic of large units in attack, where a sustained effort is necessary. Small units acting alone have relatively less depth and density, inasmuch as such units cannot attack a deep position occupied by a strong force, but would be employed as a rule against positions hastily organized, of little depth and held by small forces. (See *Continuity of the Attack, post.*)

Whatever the depth or density of deployment, the advanced element in battle consists of a line or wave of skirmishers. These are usually disposed one man to each 5 yards of front, which should be regarded as the minimum allowable interval. In some cases this interval may be increased to as much as 10 yards. The development of automatic weapons and the overhead fire of the auxiliary arms, makes it

possible to deliver a strong fire without dense skirmish lines which invite heavy losses.

A squad deploys in one line of skirmishers, and hence usually covers a front of about 40 yards, which may be increased by increasing the interval between skirmishers.

A platoon usually deploys in two lines with a section in each, the leading section as skirmishers, the rear section usually in line of squad columns. It thus covers a front of 120 yards or more, depending on the interval between skirmishers. The limiting theoretical frontage of deployment for a platoon would be a single line of skirmishers at 10 yards interval, giving a front of 500 yards. Actually such a formation would constitute over-extension or dispersion. A platoon thus deployed could develop its maximum fire power on a wide front, but would have no power of maneuver or penetration, and could not be controlled by its leader. The usual limits of front for a platoon deployed are from 120 to 250 yards, which might be exceeded in the case of a small unit, as a company, acting alone.

A company may place one, usually two or (very exceptionally) three rifle platoons in its leading or assault echelon. Thus its minimum front would be 120 yards, and its theoretical maximum with three platoons in line, each with 2 sections abreast and skirmishers at one per 10 yards of front, would be 1500 yards. A company thus deployed would have no power of maneuver, would be unable to make good its own losses and could not be controlled. The usual limits of front for a company deployed are from 120 to 500 yards.

A battalion may place one, usually two or (exceptionally) three rifle companies in the assault echelon, with the companies and their component platoons in any of the formations heretofore described. The practicable limits of frontage for a battalion deployed are from 250 to 1000 yards—usually 500 to 600 yards.

The larger units deploy by battalion. That is to say, having regard for the principle of the integrity of tactical units, the assault echelon consists of a number of complete battalions.

In addition to the intervals between skirmishers there are frequently larger intervals between platoons, companies and battalions. Thus a company assigned to a front of 500 yards would ordinarily deploy its two assault platoons with open intervals between the two platoons and between their outer flanks and the adjacent units, instead of distributing skirmishers uniformly over the front. Ordinarily these intervals between units should not exceed the deployed fronts of the units; for example, 125 yards between platoons, 250 yards between companies, 500 yards between battalions. The intervals must not be left unguarded, but should be covered by the fire of the units on either side, or by machine guns or contact groups in the intervals. In close country the intervals should be less than in open country affording a wide view and field of fire.

These intervals between units have a number of advantages. They permit the deployed units a certain amount of lateral movement within their zones of action, affording elbow room, allowing them to avoid dangerous ground and take advantage of any cover available, etc. They also favor the maneuver of supports and reserves in extending the front and enveloping hostile resistance. Accompanying weapons have opportunity to fire through the intervals.

Small units acting alone are not so limited as to zones of action. Their attacks are made against positions hastily organized, of little depth, lightly held, and presenting flanks which may be overlapped by enveloping attacks. For these reasons small units usually deploy with wider fronts or greater extension and less density and depth than larger units confronted with the necessity for a sustained attack. But over-extension of front is a dangerous form of dispersion, which must be avoided.

The details of deployment will be best understood by reference to the figures herein (Plates 27 to 34), and in the course in Musketry.

Remarks on deployment. Deployed formations are unsuitable for rapid movement or for control and maneuver. A line of skirmishers under fire can move in

only one direction—to the front. Troops once deployed are to a great extent beyond the control of the higher commanders. If a wrong direction be assigned it is very difficult to effect a change. For these reasons premature deployments should be avoided, and the frontage and direction of attack should be known before the troops are committed. If a wrong deployment has been made it will usually be best to deploy fresh troops with the proper frontage and direction, to pass them through the troops first deployed, and then to assemble the latter as supports and reserves. This may best be done at halting places, such as intermediate objective lines.

FIRE AND MOVEMENT.

We have seen that combat consists essentially in the advance of the attacker's infantry against that of the defender. The defender will oppose this movement by fire. Accordingly in order to advance, the attacker must beat down the fire of the defense by a superior fire in which all available fire weapons take part. The attack then, has two elements, *fire and movement*. The intelligent combination of these two elements of battle, is the aim of all training.

Fire superiority. Without superior fire a continued advance is impossible. The attacker therefore establishes fire superiority, and under its protection advances to a position from which still more effective fire is possible—that is, closer to the defense, and on its flanks when possible.

The elements of fire superiority are volume, accuracy and proper distribution, all of which are discussed in detail in the course in Musketry. The attacker must also evade the effects of the hostile fire by employing suitable attack formations, and utilizing such cover as is available. The attacker cannot advance without fire superiority, and should never fail to advance when he has it. Fire superiority having once been established, must be maintained.

Advance by rushes. Infiltration. It will not ordinarily be possible for the attackers, after the opening of the fire fight (and in the absence of the artillery barrage), to make a *simultaneous* advance over any considerable front and for any considerable distance, except under specially favorable circumstances. In order to advance it is necessary to suspend firing, or to utilize "marching fire" which is less effective than fire from a prone position. If fire be suspended over a considerable portion of the front, in order to permit the advance of a large fraction of the line, fire superiority may be lost, and the advance thus checked until it is regained. The advance is accordingly usually made by alternate rushes of portions of the line, varying in size from one or two individuals here and there to a platoon, the stationary portions of the line meantime continuing to fire with increased intensity. The size of the fraction advancing and the distance advanced in one rush, are determined by the nature of the terrain, especially the cover available, the distance between the opposing forces and the relative effectiveness of the fire on both sides. The length of rushes should seldom exceed 60 yards and may be only 25 yards or even less. They should not be made at random, but a favorable covered position in advance should be selected as the destination. Squad rushes are usually made progressively from one flank of the platoon or section to the other. At the end of the rush the troops take cover and reopen fire.

The size of the units advancing by rushes should be as great as is possible without losing fire superiority, as this facilitates control and produces a great moral and physical effect. The larger the units advancing the more rapid will be the progress of the attack.

Where rushes of large fractions are impossible the line may advance by individuals or small groups running or crawling forward under such cover as can be found. This process is known as "infiltration." The more effective the fire of the defense, the smaller must be the size of the fractions executing the forward movement.

The mechanism of fire and movement in the combat tactics of small units has been discussed in detail in the course in Musketry.

Fire and movement in stabilized warfare. When sufficient artillery is available and the situation demands, as is usual in stabilized warfare, the artillery furnishes the fire superiority in the shape of a rolling barrage and covering fire, and the infantry has little to do except to advance closely behind the barrage and under its protection. The artillery cuts gaps in obstacles for the passage of the infantry.

Accompanying weapons of the infantry. In addition to the weapons carried by its own members the infantry rifle platoon in combat enjoys the close support of machine guns, light mortars and one-pounder (or 37 mm.) cannon, and 3-inch (or 75 mm.) guns detached from the artillery to accompany the infantry in battle. The weapons mentioned in this paragraph (except the 3-inch guns) are called the auxiliary or accompanying weapons, being included with their personnel as a part of the infantry battalion or regiment. These weapons and their battle tactics are described in detail elsewhere in this course.

The principal function of these weapons is to knock out hostile machine guns which may have escaped the fire of the artillery, and are too well protected to be disposed of by the fire of rifles and automatic rifles. They are also employed to reach hostile troops in sheltered positions, and machine guns are especially valuable in covering the flanks and repelling counter attack.

The advantages of these small weapons are their intimate contact with the infantry and their ability to take advantage of fleeting opportunities or meet sudden emergencies. Their disadvantages are their relatively low fire power, exposure and difficulties of ammunition supply. It is the function of the infantry to assist the accompanying weapons in locating their targets.

The artillery is of course an important element in the struggle for fire superiority. The general tactics of the artillery have been heretofore briefly discussed.

CO-ORDINATION, CONTROL AND DIRECTION.

The vast size of modern armies, the wide deployments made necessary by modern firearms, the terrible confusion of battle, the sudden emergencies that are constantly arising, and the impossibility of personal leadership of any unit larger than a squad, all combine to render the proper co-ordination, control and direction of an attack a matter of great difficulty.

A detailed discussion of all the problems involved in the control of an attack would constitute a complete treatise on the art of war. It will be well, however, at this point to note briefly some of the more important agencies by which control is effected. A discussion of some of these agencies accordingly follows.

Organization and command. One of the chief purposes of organization and the hierarchy of command is to insure the control of troops in battle. Unity of command is essential. Each unit, however large or small, should have a single commander who is supreme in that unit, and there should be no troops engaged who are not under the absolute control of the supreme commander of the forces as a whole.

Plans and orders. It is almost superfluous to state that no combat can be conducted in an orderly fashion unless it has carefully been planned. The necessary orders must be issued, placing all the elements in their proper initial positions. In particular every unit must be given its particular mission in the attack—a definite task must be assigned. Subordinate commanders must know the general plan of higher command and must be given all necessary information concerning the enemy and their own troops. Knowing his own mission the subordinate commander is thus able to act intelligently in the emergencies he is certain to encounter and when, as will usually be the case, orders from above are lacking.

Unnecessary and conflicting orders during the combat should be avoided. If a subordinate commander fully understands his own mission it will usually be better to let him carry it out in his own way, unless his progress is unsatisfactory, rather

than to send him continual orders, many of which may not reach him, and many of which cannot be carried out in the situation in which the subordinate finds himself.

Intelligence. To properly control the operations of his unit a commander of any rank must know at all times the location and situation of all his subordinate units. He must know the nature of the developments taking place within the area occupied by his command. Information during the progress of an attack is even more necessary than in preparation therefor. Subordinate commanders must keep their immediate superiors constantly advised of the situation of their units. Often the superior can obtain this vitally necessary information in no other way. For example, it is of the utmost importance that the commander-in-chief be informed at all times of the positions of his front line units, the assault platoons. Thus only can he determine how the attack as a whole is progressing, and where he should employ his reserves of infantry and artillery, by which alone he can influence this progress. Aeroplanes alone cannot be relied upon to obtain this information. The higher command must depend upon the reports of the first line battalions. The position of battalion headquarters will be known to division headquarters, as they may be located by aeroplane, and the reports received from the battalions will locate the position of the front line with reference to the battalion headquarters.

The basis of information during combat is continuous reconnaissance by scouts and patrols, by the battalion intelligence troops, by the intelligence service of higher units, and by observation from terrestrial stations and from aeroplanes and balloons. In the case of the smaller units this reconnaissance must also be conducted by the leaders in person. Such reconnaissance and observation are continuous throughout the action.

Zones of Action and Objectives.

In order to properly control the progress of the attack, to prevent mixing of units, and to insure proper direction in the advance and covering the entire front, each front line unit is assigned a definite lane, leading towards the front, in which it must move. It is responsible for the progress of the attack within the lane thus assigned. These lanes are called *zones of action*. The larger units successively subdivide their zones of action and assign them to their subordinate units. For example: A regiment having two battalions in the front line would subdivide its zone of action into two parts (not necessarily equal parts), assigning one to each battalion. The larger zones are usually defined by means of prominent features of the terrain, thus: "Right boundary, village of Salt Creek to railroad junction at ——— (inclusive)." For the smaller units (company and platoon), the zone of action is usually defined by giving to the unit the right and left flanks of the position from which it will start, the width of front for which it is responsible, and the direction (compass) in which it is to advance. The leader of the unit then selects reference points in the right direction as a guide for his advance. Or the unit may be directed to attack and capture a definite locality.

More attacks go wrong by failure to maintain proper direction than from any other cause. The proper assignment of zones of action, and care on the part of leaders of all ranks in maintaining the directions assigned, are the means by which such failures are prevented. Direction is maintained by intelligent use of maps, compass and landmarks of the terrain.

An attack which attempts to continue indefinitely with no halting places designated, is very apt to become disorganized. Often a continuous advance is desirable, especially when the enemy is giving way rapidly. But ultimately it will be advisable and in fact necessary that the attacker halt, reassemble and reorganize his scattered troops, realign his front and re-establish contact along it, and replace units that have become exhausted. To do this it is necessary to halt temporarily. The localities or lines on which these halts are to be made may be designated in the initial order for the attack, or for each phase thereof, from time to time as the attack

progresses. These halting places are known as *objectives*. Upon reaching an objective the attacker reorganizes, moves his artillery and other elements forward if necessary, and prepares to hold the ground gained or to continue his advance to another objective. Objective lines are defined for the larger units. They have little bearing on the operations of the small fire units. These units are usually assigned definite localities to capture. Upon the capture of these they reorganize and themselves continue the advance, or are replaced by other similar units, and pass to the supports or reserves.

In the approach march and before the enemy has been encountered, or when following a rolling barrage, it is usually possible to maintain a fairly steady rate of advance, thereby preserving the continuity of the front and facilitating control. In the fire fight in open warfare, however, the action soon breaks up into a number of little combats by the fire units. Some of these will advance more rapidly than others, and continuity of the front may be lost. If the disorganization becomes great, a halt is made on a designated objective, and the front is reconstituted.

The "limited objective." In the very formal attacks on highly organized positions which were characteristic of certain phases of the World War, it was the custom to rigidly prescribe a series of definite objectives. These were lines favorable for defense and if practicable for a resumption of the offensive. No unit was permitted to go beyond the objective assigned for any phase, as this would expose it to counter attack and possibly break up the program so carefully prepared. At each objective the attacker made the necessary preparations for the next phase of his attack, or an advance to another objective.

This method was known as the "attack with limited objectives." It was a cautious procedure, born of the painful experiences of our Allies. Its disadvantage was that opportunities for "exploitation" or a continuation of the advance by units which had been successful in forcing back the enemy, were often lost, and the enemy was given opportunity to reorganize.

The other extreme from the attack with limited objectives was the "advance without regard to objectives" in which each unit was ordered to instantly exploit any success achieved and to keep going as long as possible.

It will be apparent that each of these very different methods has its advantages and its limitations. The "limited objective" often fails to achieve success that might be won by a bolder procedure. On the other hand, a too reckless advance "without regard to objectives" often brings on disaster in the form of counter attack. Neither method can be adopted to the exclusion of the other. In an attack on a highly organized and actively defended position, strong artillery support is necessary. To insure continuous artillery support objectives must be prescribed. If the defense is very active units which push too far ahead of their neighbors are certain to come to grief. On the other hand when the enemy's organized defenses have been ruptured and he is driven into the unorganized terrain in rear, when his troops are more or less demoralized and in retreat, opportunities for exploitation will be presented. If the full fruits of victory are to be reaped more initiative must be allowed to subordinates. The resulting disorganization of the attacker's front will be far less dangerous when the enemy is demoralized.

The extent to which objectives should be prescribed accordingly depends on the conditions, specially the fighting power of the defender. Objectives should be prescribed to the extent necessary to control and co-ordinate the attack and afford reasonable insurance against disaster. They should never be allowed to limit a success which might otherwise be achieved. When the enemy has broken and is in retreat exploitation and individual initiative by subordinate commanders may and should be carried to a point which would be foolhardy when opposed to a foe whose fighting power was still unimpaired. When the enemy is no longer capable of opposing an organized resistance the attacker should push his advance "without regard to objectives," or "go while the going is good."

Intercommunication.

Information, if it is to be of value, and orders if they are to be carried out in time, must be promptly and surely transmitted. The various units in the same locality must maintain continual contact so that each will know the situation of its neighbors. Higher commanders should be at all times in touch with their immediate subordinates. Only thus can the progress of the attack be properly co-ordinated and controlled. This is accomplished by an organized and systematic service of communication.

The first requirement for effective intercommunication is that every unit, however large or small, must have at any time a headquarters at a definite spot, and that the location of these headquarters should be known to immediate subordinate and immediate superior headquarters. The commander may be in person at his headquarters. If he leaves, there should be a subordinate in charge who knows where the commander may be found. When the headquarters moves, due notice should be given to all concerned. In the case of the small units (squad, section, platoon) the headquarters is the person of the leader. The corporal of a squad should generally be visible to his men. Larger headquarters (company or higher units) have a message center where communications are received and from whence they are dispatched.

Agents of communication are commonly exchanged by subordinate and higher headquarters. For example, the platoon sends one runner to company headquarters, who is used to send messages to his own platoon. In the case of higher headquarters officers with enlisted assistants are thus detailed.

Means of communication. For the higher units every practicable means of communication is employed. The usual means are the telegraph and telephone, wireless, carrier pigeons, pyrotechnics, couriers, both mounted and afoot, aeroplanes, visual signals of various kinds, etc. For the small units near the front and continually moving, any methods involving fixed stations and cumbersome apparatus are manifestly out of question, and only the simplest and most reliable means can be employed. These include the following:

- a. Spoken word.
- b. Individual signals (with arm).
- c. Whistle.
- d. Verbal or written messages by courier or runner.
- e. Flag (wig-wag or semaphore).
- f. Pyrotechnics. (Pistol and rifle lights, flares, rockets, bombs, smoke signals.)

In the squad, spoken word and arm signals alone will be used. When, in the section or higher unit these are insufficient, the principal reliance will be runners. The bugle is not used in battle. The whistle is used only to attract attention or to signal, "cease firing." Horns are used in the trenches, usually as alarms for gas attacks. Flag signals are useful for communication over impassable ground. They may be transmitted laterally and to the rear, but not to the front. The company is provided with several flag kits. Pyrotechnics should be used sparingly, as the signals thus conveyed are very apt to be misunderstood, and they also can be seen by the enemy. Their use by small units (platoon or company) is generally limited to acknowledging signals or indicating positions. Other special signals may be agreed upon. They should be few in number and of the utmost simplicity.

For the small unit in combat the spoken word, arm signals and runners will be the usual means of communication. Their use is explained in detail elsewhere in the course.

TENTH LESSON.

PRINCIPLES OF OFFENSIVE COMBAT (Continued).

Continuity of the Attack.

In former times great battles were fought to a conclusion in a few days, often in a few hours. Modern combats continue practically without cessation, for weeks and

even months. The modern attack is hence characterized by continuity, and organization and tactics must be such as to provide for this sustained effort.

The endurance of men is not greater than formerly, and this sustained effort accordingly demands constant impulses of fresh troops from the rear. This requires large reserves, especially the general reserves of the higher units. The deployment of the platoon, company and battalion shows little variation, the impulses being given by replacing these units in their entirety with fresh troops.

Local penetrations. Continuity of front can seldom be preserved during the attack. The resistance of the enemy will not be uniform along the entire front. Certain units will be held up by the defender's fire and counter attack. Others will push rapidly forward and effect deep penetrations into the weak spots of the hostile front.

It is in this situation that the attacker's greatest opportunity will be found. It will seldom be wise to reinforce units which have been held up. The enemy should be attacked where he is giving way and not where he is holding. The higher commanders should be prompt to exploit the successes of units that have effected such penetrations, by use of their reserves. The intermediate resistances are then broken down by attacks against their flanks and rear. A position which has strongly resisted a frontal attack will often crumble under a combined attack in front and flank. Thus exploitation proceeds by widening and deepening the penetrations.

The risk involved in such operations is usually inversely as the size of the unit effecting the penetration. Therefore small units which have made a marked advance should be promptly supported.

These local penetrations are the critical points of the combat for both attack and defense. If the attacking unit which has made a penetration acts promptly and is adequately reinforced, it will be able to widen the breach, break down the adjacent resistance, and enable its neighbors on either flank to advance to its support. Therein lies the essence of victory. But if the attacker, having effected a local penetration, is hesitant, timid or vacillating, he affords the defender the best of opportunities for a counter attack with fire and movement, which smashes the flanks of the penetration and forces the attacking troops back, with heavy losses.

The attacker must then be prompt to take advantage of such opportunities. Section and squad commanders must promptly reinforce a squad or even an individual who has succeeded in getting forward. Platoon, company and battalion commanders, using second line sections, supports and reserves, must promptly reinforce a successful advance. Units on either flank of such a penetration must take prompt advantage of the situation and push up abreast of the successful troops, or even effect a further penetration. Such continued aggression on the part of the attacker deprives the defender of the opportunity to organize counter attacks.

Continuity of the attack requires that the attacker retain the initiative or upper hand. This is accomplished by pushing the attack with such vigor that the defender is allowed no opportunity to prepare an offensive of his own. Halts should be made no oftener than is necessary to reorganize scattered troops and bring up artillery and supplies. The advance should then be resumed promptly with fresh troops. If the halt be protracted the defender has opportunity either to fortify his position or to prepare a counter attack in force, or both.

All gains must be tenaciously held. If unable to advance a unit must at least not retreat. The commander-in-chief should be able to rely upon his infantry to hold every inch of ground.

Continuity of the attack requires that units that have suffered heavy casualties or become exhausted in combat, be replaced or relieved by fresh units. This process is known as relief or passage of lines. The smaller units are usually relieved upon the accomplishment of a definite task—the capture of a locality held by the enemy. The larger units are usually relieved during the halt on a designated objective, or at the conclusion of a phase of the attack. The relieving unit deploys in rear of the line, passes through the old unit in the deployed formation and continues the advance.

Units thus relieved are reassembled and assigned to supports or reserves.

Supports and Reserves.

Supports and reserves are bodies of troops, preferably complete units, temporarily withheld from participation in the combat, for the purpose of meeting later developments. Supports pertain to small units, reserves to larger units. All units larger than a platoon have their own supports or reserves.

Supports and reserves have an important bearing on nearly every problem that confronts the commander.

The functions of supports are:

1. To replace losses and fill gaps in the firing line.
2. To envelop resistances.
3. To guard the flanks and oppose counter attack.
4. To relieve exhausted units and carry on the attack.
5. To assist in the organization of captured terrain.

Reserves are employed in a similar manner but on a larger scale. They relieve front line units in their entirety when the latter are exhausted, and are employed for exploitation and pursuit. The reserves of small units are known as local, those of larger units as general reserves.

We have seen the difficulty of controlling troops that have been committed to action. It is accordingly by the use of his reserves alone that a commander (except of a small unit) can influence the course of battle, meet its emergencies, take advantage of the opportunities afforded, exploit victory or evade the consequences of defeat. Therefore at the opening of a combat, especially when the situation is uncertain, ample reserves should be retained under the immediate control of the commander. Troops which are not employed exercise no influence on the outcome. Therefore the reserves must be boldly and unhesitatingly employed when the occasion arises. The commander must have the knowledge and skill to recognize the occasion, and the resolution to employ his reserves aggressively.

Initial strength of reserves. The initial strength of reserves is determined by the density of deployment, and is influenced by the following considerations:

1. The numerical strength, armament and defensive works of the enemy.
2. The depth of penetration required.
3. The exposure of the flanks. If there be no neighboring units on the flanks, reserves must be provided for protection.
4. Whether the unit is acting alone or as part of a larger force. In the former case stronger reserves *may* be required, but this will depend on the nature of the hostile resistance.
5. Whether the action be a decisive or merely a holding attack.

The table in the discussion on deployment (see *ante*) gives typical densities of deployment for various units for a sustained attack on an enemy organized in depth.

The proportion of reserves increases progressively with the size of the unit, because of the necessity for sustaining the attack. A platoon is not required to sustain its own attack and accordingly has no supports. A company must sustain the attack of two platoons, and usually holds a small support for this purpose. Finally a division may be required to sustain a powerful attack for days or even weeks, and must have a density of deployment, that is, reserves, adequate to such a task.

A company with two platoons in line has a reserve strength of one-third its effective force. A battalion with two companies in lines has a reserve of something over one-third. A regiment, with two battalions in line has regimental or higher reserves of about two-thirds. If to this we add the battalion reserves the proportion for the division is nearly three-fourths. Hence we see that the strength of reserves may vary from somewhat less than one-third to somewhat more than two-thirds of the total strength of the infantry.

Reserves are held in concealment sufficiently in rear to permit their deployment without interference by the enemy. They follow up the advance by bounds from one covered position to another. If it be evident that they will be employed in any

particular locality they may be placed accordingly. Otherwise they are held in rear of the center, always under the immediate control of the commander of the unit to which they pertain. Ordinarily the reserves should not be divided, but held intact. They should be conveniently placed with reference to the avenues of approach to the places where they may be required.

Principles governing the use of reserves. There are a few important principles which should govern the use of reserves, especially the general reserves.

In accordance with the principle of the integrity of tactical units reserves should not be detached here and there in small bodies. When it is necessary to employ a portion of the reserves they should be sent in as complete units, at least a platoon, seldom by section or squad, and never as individuals. To employ the reserves here and there in small numbers constitutes a dispersion of force. They should be employed in strength, but only for important missions. When it is necessary to strike with the reserves, let the blow be a telling one.

Reserves should generally be employed *aggressively*, not *defensively*. It will seldom be wise to use reserves to reinforce a unit whose progress has been stopped. Frequently this will simply increase losses. It is better to employ the reserves to relieve the situation by a new attack. Even in the event of a counter attack it is better in the case of large units, to attack the counter attack rather than to reinforce the unit against which it is directed.

The most important principle is that the reserves should be used not where the enemy is holding, but where he is giving way. Higher commanders should be prompt to exploit the success of those units which have penetrated into the hostile positions beyond their neighbors.

The commander who hopes to reap the full fruits of victory must have strong and fresh reserves in hand for pursuit.

Troops which have been relieved from the front line should, as soon as practicable, be reorganized as supports and reserves.

At the opening of a decisive attack the general reserves should be strong, as with these alone the commander can influence the action in accordance with his own wishes. Troops which are not employed exercise no influence on the result. Therefore the reserves should be liberally employed at the right times and places. To recognize these occasions is the test of the skill of the commander. A commander who has committed his last reserve is deprived of his last weapon and cannot meet a new emergency. Accordingly an effort should be made to hold some reserves until the last. When the enemy breaks, the golden opportunity is at hand, and he should unhesitatingly commit his last formed unit if necessary to reap the full fruits of victory. If at any stage of the combat the reserves have become dangerously depleted, they should be reinforced by assembling units which have been relieved from the line during the course of the combat. These units, whose vitality will have been temporarily lowered as a result of their previous employment, should be again used only when imperatively necessary.

Maintenance of Man Power.

A sustained or continued attack on a large scale demands constant accessions of fresh troops. The subject of tactical reinforcement has been discussed. We are here concerned with reinforcement in a general sense, or the maintenance of the fighting strength of the armed forces of a nation at war.

In former times warfare was usually characterized by occasional pitched battles at relatively long intervals. Modern warfare is a war of attrition or practically continuous combat, this being the result of the size of the forces engaged.

This attrition or steady waste or destruction of human material is almost a matter of routine, and is repaired by routine procedure.

A division enters the front line on an active front. Depending upon the activity on the front, the stamina of the troops and the particular tasks assigned it, the division remains in line, taking part in the battle for several days or several weeks.

At some time a critical instant is reached when the division is said to be exhausted. The men may be physically worn out, their morale may be low, and the division may have suffered heavy casualties. Its fighting efficiency is so lowered that it can no longer be advantageously employed in the front line. Unless it is relieved the division will soon reach the "breaking point"—it will fail in an attack, or its morale will be so injured that an unduly long time will be required to rebuild and restore it.

Before it reaches this breaking point the division should be relieved and replaced. It is then sent to a rest area, where complete relaxation and rest is allowed for a few days. The casualties are then replaced by fresh troops from replacement depots or divisions, training is resumed, and the morale and strength of the division are gradually built up until it is again fit to take its place in the line of battle. It is now a "fresh" division.

This procedure is a matter of routine. The length of time that a division should remain in line and the period required to restore its normal fighting capacity will depend on conditions, but will be known quite accurately from experience.

It is better, if practicable, to maintain veteran divisions by building them up again when they have suffered losses in combat. If the strength of a combatant is growing, new divisions are added from time to time. If on the other hand, the man power of the nation is on the wane, it will ultimately be necessary to break up certain divisions.

Replacements are obtained by the operation of the draft or compulsory service law. The drafted men are given their preliminary training in large camps or training areas. They are then sent to replacement depots or divisions where they are available for assignment to replace casualties in the combat divisions.

Junior officers are drawn from all available sources. In our next war it is contemplated to draw them chiefly from the Reserve Corps and the R. O. T. C. They are sent to officers' training camps and thereafter are assigned to units in training, replacement divisions, and ultimately to combat divisions. In addition to these sources large numbers of junior officers will be obtained by the promotion of qualified enlisted men, preferably from the combat divisions. Before being commissioned these men are sent as candidates to take a course of training at camps or candidates' schools.

In addition to this replacement of human waste in war, man power should also be conserved by proper and unremitting care of the wounded and their prompt restoration to health and service. The records of the World War show that of the American wounded received in the hospitals of the A. E. F. 85 per cent were ultimately returned to full duty.

THE ASSAULT. REORGANIZATION.

Unless the enemy withdraws before the threatened shock, the attack in open warfare culminates in an assault with the bayonet upon the hostile position.

The assault is seldom delivered simultaneously over any considerable extent of the front, but each small unit (section or platoon) assaults its own particular objective when its leader judges that such an attack will probably be successful.

The assault should, if practicable, be delivered from a favorable locality about 50 yards from the hostile position, and is made at top speed, without firing. If the distance be much in excess of this the men are apt to be exhausted upon their arrival. If it be necessary to launch the charge from a greater distance, it is usually made at a more deliberate pace, employing marching fire.

When practicable the assault of one unit should be covered by the fire of another up to the last moment.

The confusion resulting from the assault offers a favorable opportunity for counter attack by any formed troops of the enemy. Other units should be placed promptly in positions to protect the assaulting troops from such attacks. A few men of the unit itself, including, if possible, some automatic riflemen, are also pushed to the front to guard the unit during reorganization. To guard against counter attack and hold the ground won is the first duty following assault.

The assault units are promptly reassembled and reorganized. Each leader, from a squad up, is responsible for the reorganization of his own unit. The reorganization is checked up, leaders who may have become casualties are replaced, prisoners and slightly wounded are sent to the rear, and the seriously wounded are disposed under cover from fire, ammunition is replenished, etc. The unit then continues its advance or completes its dispositions to hold the ground won.

The mixing of units is sometimes inevitable in the attack, especially at the time of the assault. Men who find themselves separated from their own commands should join the nearest unit and place themselves under its leader. Officers and non-commissioned officers organize provisional units when it is impossible to reassemble the original organizations. All such provisional units should contain the necessary elements of a fire team, especially leaders and automatic riflemen, and function in all respects as regular units.

EXPLOITATION. PURSUIT.

It is not the defeat alone, but the destruction of the enemy's armed forces that is the aim of combat. Accordingly a successful attack must be promptly exploited, by the force as a whole, and by each unit thereof in its own zone of action.

When the defender has been driven from a strongly organized position into the unorganized terrain in rear, the best opportunity to inflict damage upon him is afforded. This demands on the part of the attacker, prompt continuation of the advance before the defender can reorganize for further resistance or, in case the defender decides to withdraw, a prompt pursuit before he can reassemble his scattered forces and organize rear guards to cover his retreat. Prompt and vigorous action at this critical time will usually result in heavy damage to the defender with small losses to the attack. His retreating troops, falling back, communicate panic to those in rear. In particular the attacker should endeavor to reach and capture the defender's artillery before it can be withdrawn.

Troops which have been engaged in a protracted attack are in no condition to pursue. Accordingly, when it becomes evident that the attack is succeeding the attacker brings up strong and fresh reserves to initiate the pursuit. Cavalry and mobile field artillery, motorized machine guns, tanks, etc., are utilized if available. Infantry may be moved forward in motor trucks if the condition of the roads permits. Contact with the enemy must not be lost and the pursuit should be conducted on a broad front by parallel columns, as this facilitates contact and makes it possible to turn the enemy out of any position in which he may endeavor to make a stand.

The pursuit should be conducted with great boldness, as a counterstroke by a defeated and retreating force is not greatly to be feared. This is a case where it is safe to be bold. A commander should be cautious when caution is necessary to safety, as when opposed to an enemy still capable of strong resistance. When the enemy's resistance is broken, excessive caution simply means the loss of a golden opportunity to reap the fruits of victory.

SECURITY.

A commander may be excused for being defeated, but never for being surprised.

Troops deployed for battle can defend themselves only from an attack upon their front. They can move only to the front, and their flanks are most vulnerable to an unexpected attack. For extended movement it is necessary to place troops in column. A column formation caught by surprise fire, especially from the flank, may suffer ruinous losses in a very short space of time. Moreover, even a deployed line may be seriously damaged by fire from the front, if caught in the open, while in motion, and at short range.

The security of the attacking troops is accordingly one of the most important and most difficult problems of the commander.

The measures for security in battle are many. In a broad sense all the measures of attack contribute either directly or indirectly, to its security. Some of the more important of the direct measures are as follows:

1. *Correct information of the enemy prior to attack.* This prevents premature deployment on wrong lines or in wrong directions with accompanying risks. It prevents small units becoming deeply involved with an enemy of superior strength. The sources of information concerning the enemy have been discussed. But whatever information has been obtained in advance, combat reconnaissance to the front to locate and gain contact with the enemy prior to deployment, must never be omitted. This reconnaissance may sometimes take the form of an attack on the enemy's position by a portion of the force, for example the advance guard of a command having an aggressive mission. This is known as reconnaissance in force, and is usually an effective method of determining the enemy's position and strength. In a meeting engagement, or unexpected encounter, the need for prompt action may result in a very brief reconnaissance. Correct information necessarily implies efficient means of transmitting information, or intercommunication.

2. *Combat flank reconnaissance.* We have seen that the flanks are the most vulnerable portions of a unit, either deployed or in column. Irrespective of any other measures which may have been taken, every unit is responsible for the security of its own flanks. For the fire units (squad and section) the measures of security are usually limited to flank observation by the scouts in front, and by the leaders and the men on the flanks of the line. In case of a threat against their flanks these small units can readily make provisions to meet it. They are, moreover, protected by the presence of the other units, close in rear.

Flank protection for the platoon in combat is provided by the presence of the support section close in rear of the leading section. In case both sections are deployed and engaged, scouts may be placed on the exposed flank.

The company and larger units protect their flanks by the use of flank combat patrols. If a flank be greatly exposed, as when there is no other unit in that direction, the higher command may make special provisions for security. In the absence of such provisions the use of small combat patrols at all stages of the combat is a matter of routine. The commander of the flank unit of a general line is responsible for the security of that flank. In the absence of any special orders from higher command he will take such measures as he deems necessary.

Unless the exposure be great, a small unit will not ordinarily detach any considerable portion of its strength for the purpose of flank protection. Flank patrols provide protection primarily by giving prompt warning of any danger from the flank, in order that measures may be taken to meet it. The strength of such patrols might be about as follows: For a platoon, 2 men to a squad, for a company 4 men to a section, for a battalion, a section to a platoon. This will depend upon the extent of exposure. If more than this is considered necessary it should generally be provided for in the orders of higher command.

These flank patrols move slightly in rear of the assault echelon of the unit. They should be able to see their own command, and if possible should establish contact with other units or similar patrols from other units, on the flank. Their distance from the flank will depend on the terrain and the strength of the unit. It should be such that they can prevent the command from being taken by surprise in flank, either fire alone or counter attack. In a dense wood this might be not over 30 to 40 yards. In open terrain it might be several hundred yards. A large unit may be subjected to rifle fire at ranges of 1000 yards where the terrain permits, and it requires more time to prepare to meet attack than does a small unit.

The flank patrols will seek positions on elevated ground, where they can see their units and observe the terrain to the flanks. They keep pace with the advance of the unit, moving from one favorable observation point to another. A patrol which can see nothing that cannot be seen by the unit itself is useless as a measure of security.

Combat patrols are usually complete squads or half squads, rather than selected men as would ordinarily be the case in a reconnoitering patrol. The formation of a combat patrol is that of any body of troops on the march. The point (or advance party) consists of the scouts, who are specially trained in reconnaissance. Next in rear of the scouts is the squad or patrol leader, who can here best control his squad. Near the squad leader is his principal fire power, the automatic rifleman. He should not be used for reconnoitering, but should be held as a reserve of fire power, close to and under the control of the squad leader. The "get-away man," usually the second in command, is to the rear of the squad.

Unlike reconnoitering patrols, whose function is solely to gather information, flank combat patrols will fight whenever necessary for the security of the command. They will fire upon and drive back small patrols of the enemy endeavoring to gain the flanks of the unit. In case of the approach of a unit of greater strength than the patrol, the latter will promptly signal or dispatch a messenger to the unit, giving warning of the impending danger, and will then seek a favorable position and by its fire delay the enemy's advance.

A man should be detailed on the flank of the unit to watch for signals from the flank patrol.

3. *Flank covering detachments.* For a small unit ample warning of danger from the flank will usually be sufficient, as little time is required to prepare to meet it. For a large unit in an exposed situation more than this may be necessary. When this is the case the flank combat patrols may be of such a strength as to have considerable power of resistance, in which case they are called flank covering detachments. They may include machine guns in addition to infantry. A large flank covering detachment is a flank guard, and in the case of a large unit may include all arms.

The covering detachment proceeds to a locality favorable for observation and defense, and advances by bounds from one such locality to another, keeping pace with the progress of the command. It moves in the formation usual for all units, that is, with a small advance guard and flank patrols of its own. The main body of the detachment is held in readiness to meet an attack.

A flank detachment may be sent for the express purpose of concerted participation in the attack at some stage of the action, for example, to envelop the flank of the enemy. In such case it should have a strength appropriate to its mission, and may include machine guns and other accompanying weapons.

The maneuver intervals between units in line are covered by combat patrols or detachments of a size dependent upon the terrain, the width of the interval and the size of the units.

Summary. Combat reconnaissance to the front and flanks is continuous by all units. For the smaller units this involves constant observation by the leader in person, by scouts and men on the flanks of the line. For the larger units it involves the use of combat patrols to give warning, or detachments to offer resistance, according to the size of the unit and the extent of exposure.

4. *Adjacent units.* In a general line of battle adjacent units mutually protect each other's flanks. To insure such protection contact between the units should be maintained. When necessary flank contact patrols are used for this purpose.

5. *Aerial reconnaissance.* This is an important measure of security for the larger units, but has little bearing upon the conduct of small units, and can in no case entirely replace reconnaissance on the ground. Aerial reconnaissance is intermittent, and a considerable time is required for the transmission of the information gained. Moreover the aeroplane, while it can often detect the movement of large bodies of the enemy, and give information thereof in time to be of use, can neither detect the movements of small bodies, nor give warning thereof in time. Accordingly this measure of security is of no immediate value to the small unit in combat.

6. *Proper formations.* A formation suitable to the situation is an important element of security in commands of all sizes. The formations suitable on the march,

during the approach to battle and in the battle itself, are explained and illustrated elsewhere in the text. There can be no excuse for a leader who permits his command to be surprised in an unsuitable formation.

In case of surprise fire against the flank of a deployed unit all men who are not prone should instantly drop to the ground, and take such cover as is available. Automatic riflemen on or near the exposed flank should at once engage the enemy with fire. Other men on the exposed flank should, by crawling, effect a change of position so as to face and be able to fire upon the enemy. It will ordinarily invite heavy losses to attempt to re-assemble the unit and deploy it in a new position while under fire at close range. The troops should remain in their position, all taking cover, and individuals on the flank making a slight change of front if practicable. The nearest supports or reserves should be at once deployed against the enemy, and the fire of any available machine guns directed upon him.

7. *Machine guns.* These weapons, on account of the facility with which their fire can be switched in any direction, and its great volume, are a most important element of flank defense.

8. *Movement under fire.* A unit should never advance across an open space until all localities from which fire might be directed upon it have been reconnoitered by scouts. The unit then advances by a bound from one covered position to another which has been selected and reconnoitered. If the movement takes place under fire the advance is made by rushes of fractions or by infiltration of individuals. The methods of movement under fire are discussed in the course in Musketry, and elsewhere in this course.

9. *Concealment and cover.* The accuracy and volume of fire of modern fire arms have made cover and concealment matters of greater importance than ever. While in position or while moving, advantage should be taken of all cover which the terrain affords, both by units and by the individual, and infantry should be thoroughly trained in the use of cover. The use of cover has been fully explained in the course in Musketry. The best cover is superior fire effect.

The cover of darkness is commonly utilized for the movement of troops, even in localities far in rear of the battle front, as even here the movement of large bodies can be seen by hostile air scouts. Preparations for an attack are usually effected under cover of darkness, but night attacks should be resorted to only when it is apparent that there is no hope of success by day. It is almost impossible to control troops in the dark, and the difficulty increases rapidly with the size of the force. History records few cases of successful night attacks. Small operations, including raids, executed by specially trained men who are familiar with the ground over which they operate, are often successful, and night is commonly utilized for patrolling by forces in close contact with the enemy. A very careful study of the ground by day, a program in which the duties of every man are prescribed in detail, and usually rehearsal of the operation over ground similar to that in which it is to take place, are essential to the success of night raids. (See Scouting and Patrolling.)

10. *Supports and reserves.* Supports and reserves protect the flanks of deployed units by attacking the hostile troops which endanger them. Their employment has been elsewhere discussed.

11. *Field fortification in the attack.* The infantry must cling with the spade to that which it has won with the rifle. The use of intrenchments in attack will not be habitual. However, an attacking unit which halts in any position should assume a defensive attitude, and be prepared to repel counter attack. If the halt is to continue for a considerable period, the attacker should select terrain favorable for defense and intrench to the extent that the situation demands. Elaborate organization, involving the erection of obstacles, etc., will be undertaken only on orders from higher command, but individual pits or fox holes and short lengths of trench, may be dug on the initiative of subordinate leaders. The use of field fortification in the attack, including the organization of captured terrain, is discussed in detail in the course in Field Engineering.

12. *Organization in depth.* Organization in depth permits of the maneuver of supports and reserves to the flanks, or even of prompt deployment facing a flank. It is accordingly an important element of security.

13. *Aggressive measures.* As a rule the best protection against counter attack by the defense will be a vigorous prosecution of the attack, which retains the initiative in the hands of the attacker, and forestalls the plans of the defense. Halts or delays or any lack of aggressiveness afford the defender opportunity to organize counter attack.

14. *Security of the line of retreat.* On a continuous battle front the security of the lines of retreat from hostile aggression is usually automatically provided for. Nevertheless the higher command must make sure that the lines of retreat are in good order, passable for transport, etc., in case a retrograde movement should be necessary. In the case of forces acting alone the security of the line of retreat may be a matter of grave concern, which will greatly influence the plans of the commander.

15. *Supply.* Supply of the material essential to the continuance of the attack is, of course, an element of security. The supply of ammunition is sufficiently important to warrant special mention. In this the subordinate leaders and the higher command must co-operate, the former to prevent waste and to give due notice of the needs of their units, the latter to insure that the necessary supplies are forthcoming as required.

The routine of supply is further discussed in following paragraphs.

SUPPLY.

Supplies of all kinds are rapidly consumed in combat. The most important supplies, in the order of their importance are ammunition, water and food.

Ammunition.

It is the duty of all junior officers and non-commissioned officers to prevent waste of ammunition, and to give due notice in ample time to their next superiors of need for ammunition. Every soldier should conserve the ammunition on which his life may depend. Effort should be made to reserve a few rounds for a last emergency. The proper rates of fire should be observed, and no shots fired at random.

Extra ammunition is issued just prior to entry into combat. An infantry soldier can carry 250 rounds on his person.

During the combat advantage is taken of every opportunity to replenish ammunition. The dead and wounded should be stripped of their ammunition by the squad to which they belong. A halt or lull in the action gives opportunity for re-supply of ammunition. In particular a halt for the night will make it possible to bring up an ample supply, and the following morning should find every soldier fully equipped.

A continuous stream of ammunition is sent forward during the attack. The method of procedure is as follows:

A battalion ammunition point is established for each first line battalion at the most advanced locality which the ammunition wagons can reach. This point is moved forward by bounds as the attack progresses, the ammunition being held in the wagons.

The chain of ammunition supply from the divisional train or dump to the front line is as follows:

a. From the divisional dump (or train) to the regimental distributing point, by wagons of the combat train, under control of the regimental supply officer. (R4.)

b. From the regimental distributing point to the battalion ammunition point in the same wagons.

c. From the battalion ammunition point to the battalion reserve by cart or pack mule if practicable, otherwise by carriers.

d. From battalion reserve to front line companies and thence to the firing line by carrying parties.

SERVICE OF SUPPLY

SUBDIVISIONS OF TERRITORY AND COMMAND.

MODES OF TRANSPORTATION

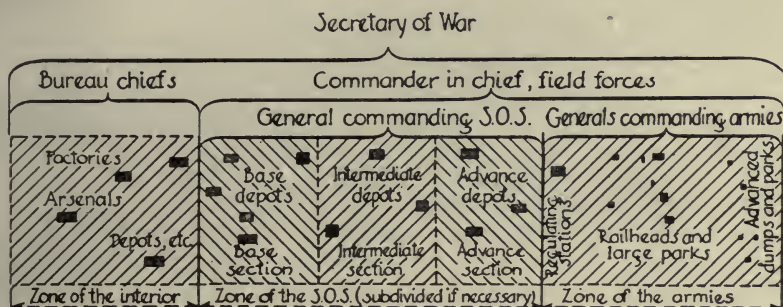


FIG. 1 DIVISION OF TERRITORY AND COMMAND

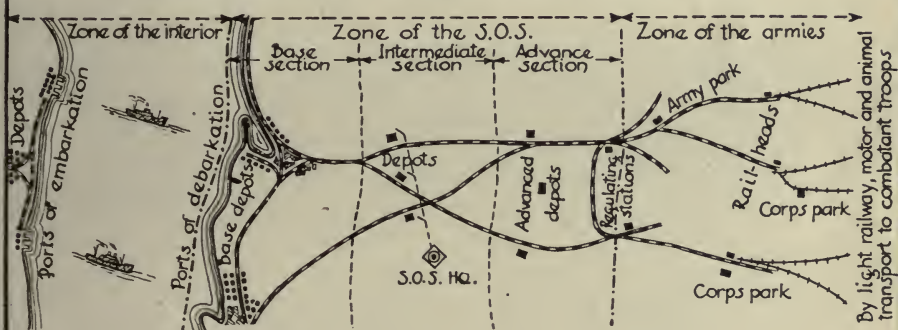


FIG. 2 OVERSEAS OPERATIONS

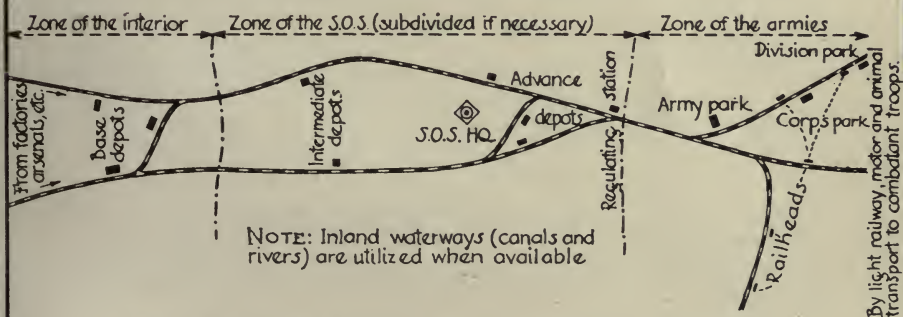


FIG. 3 OPERATIONS IN CONTINENTAL TERRITORY

PORTS, DEPÔTS, REGULATING STATIONS AND LINES OF COMMUNICATION.

AMERICAN EXPEDITIONARY FORCES



LEGEND

- ⊙ General headquarters.
- ☆ Headquarters S.O.S.
- ≡ Depôts.
- ⊠ Regulating stations.
- Main lines of communication
- Overflow lines of communication.
- Secondary lines of communication.

The last stage in the forward movement of ammunition in the attack is by means of infantry carrying parties. All reinforcements going forward carry extra ammunition in addition to their own supply, and all carrying parties become reinforcements. They do not return when they have delivered the ammunition but place themselves under the leader of the unit to which they have been sent. No men are permitted to go to the rear for ammunition.

Carrying parties are organized by battalion and regimental commanders from reserve companies. They should consist of complete units, at least squads, each under its proper leader. The duty is arduous and dangerous and not popular. Mixed units are difficult to control. Better results are obtained when the carrying parties belong to the same battalion, or at least the same regiment, as the organization to which they carry.

The ammunition wagons of the regiment (including those of all battalions) when empty, proceed under the direction of the regimental supply officer to the division distribution point, where they are refilled from the divisional train or dump. They then return to a regimental distribution point whence they are sent forward as needed to the battalion ammunition points.

Company trains. The trains which pertain to an infantry rifle company are classified as field train and combat train. The field train consists of one 4-mule wagon carrying rations and baggage. The combat train consists of an ammunition section and a ration section. The ammunition section consists of one 4-mule wagon carrying small arms ammunition. The ration section includes one 4-mule rolling kitchen, one 2-mule ration cart and one 2-mule water cart.

On the march the company trains are assembled by battalion (or regiment). The combat train accompanies the battalion in the approach march, and as the combat opens distributes the extra ammunition, establishes an ammunition point at the forward limit of wagon transport, and selects a suitable point at or near the same place for the company kitchens, which are usually consolidated by battalion. This supply establishment is known as the 2nd or rear echelon of the battalion (or company). It is under charge of the battalion supply officer (Bn. 1 and 4). (See Plates 27 and 29.)

Hot meals are prepared at the company kitchens (2nd or rear echelon) and sent to the front by pack mule, carrying party or any other available means. Carrying parties for meals may return after the performance of their duty.

In addition to meals sent forward from the rear echelon all men carry rations on their persons, in case of emergency when supply from the rear is temporarily cut off.

EVACUATION OF THE WOUNDED.

The evacuation of the wounded is an important element of morale and discipline. In addition to the fact that the wounded are entitled to and should receive prompt attention, their presence with a command has a bad moral effect, especially if there is any suggestion that they are being neglected.

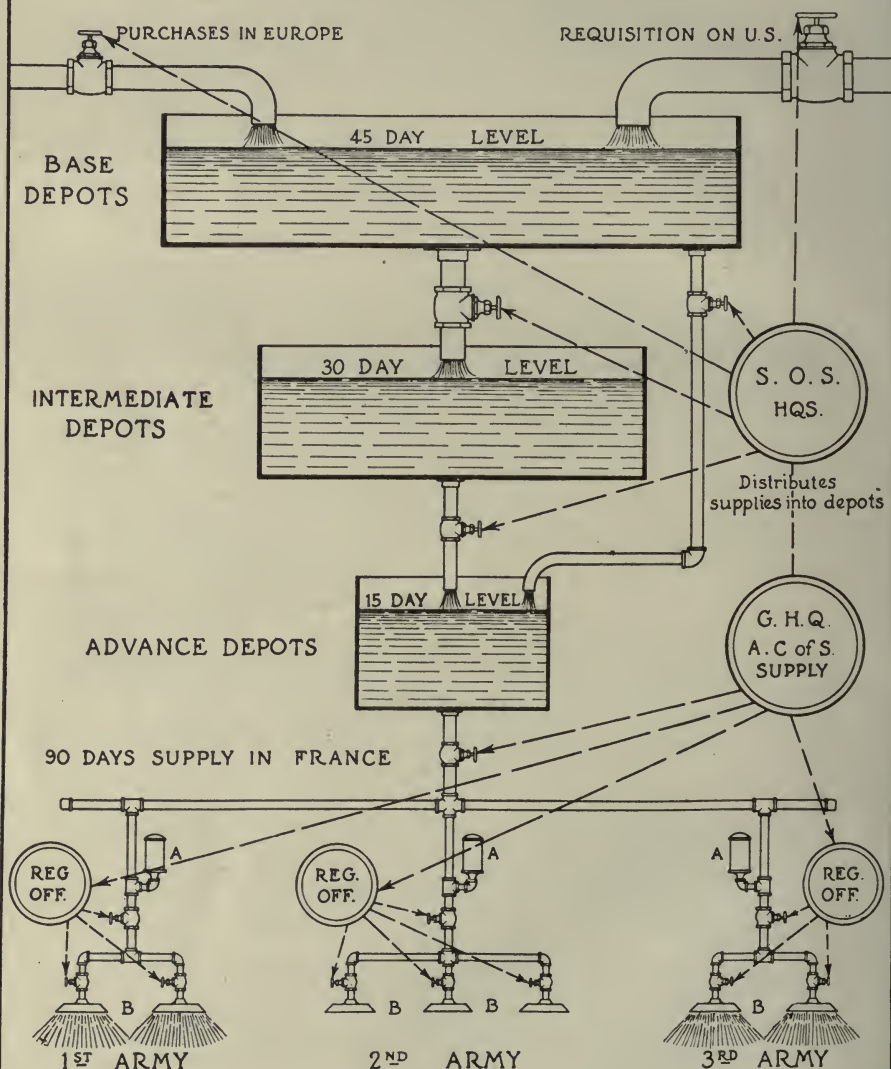
This duty is the special function of the medical department, and medical personnel form a part of battalions and all higher units.

Upon the receipt of their wounds the wounded are given first aid (see course in Military Hygiene, Sanitation and 1st Aid), and placed under cover. Here they are picked up by the litter bearers of the medical troops and transported to the battalion aid station where anti-shock treatment is administered to prepare them for further travel to the rear by ambulance.

Wounded who are able to walk are directed to the battalion aid station, and the location of this station should always be announced in orders. A battalion aid station is established for each front line battalion. It will be on or near the natural line of movement to the rear and in a sheltered position. Its distance from the front line will vary, according to the terrain and other conditions from 300 to 1200 yards. The battalion aid station advances by bounds in following up the attack.

SERVICE OF SUPPLY

DIAGRAM ILLUSTRATING FLOW OF SUPPLIES
IN THE AMERICAN EXPEDITIONARY FORCES



- A Small storage at regulating stations to cover irregularities and insure uniform flow of supplies
- B Railheads. Points at which supplies are delivered to troops.

SERVICE OF SUPPLY

DIAGRAM ILLUSTRATING METHOD OF FOOD SUPPLY IN OPEN WARFARE

MEANS OF TRANSPORTATION IN SUCCESSIVE ECHELONS

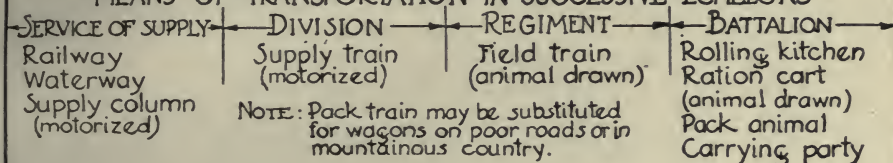


FIG.1 RAILHEAD WITHIN RADIUS OF ACTION OF FIELD TRAIN OF COMBATANT TROOPS. SUPPLY TRAIN IN RESERVE.

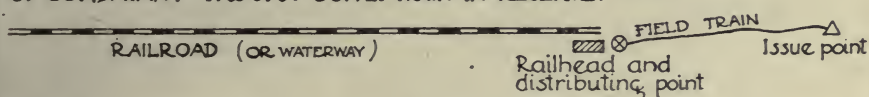


FIG.2 RAILHEAD WITHIN RADIUS OF ACTION OF SUPPLY TRAIN OF DIVISION. SUPPLY COLUMN IN RESERVE.

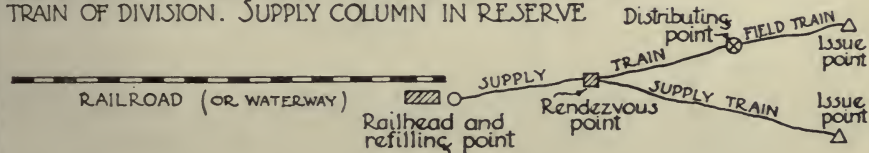


FIG.3 RAILHEAD BEYOND RADIUS OF ACTION OF SUPPLY TRAIN OF DIVISION.

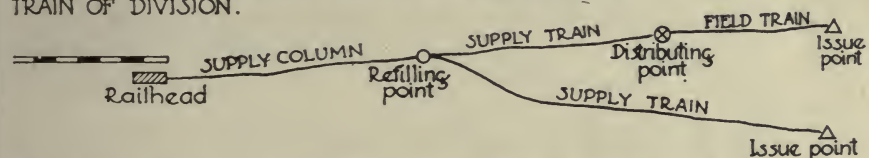


FIG.4 SAME AS FIG.3 BUT SHORTER HAUL. DELIVERY MADE DIRECT BY SUPPLY COLUMN TO DISTRIBUTING OR ISSUE POINTS. SUPPLY TRAIN IN RESERVE.

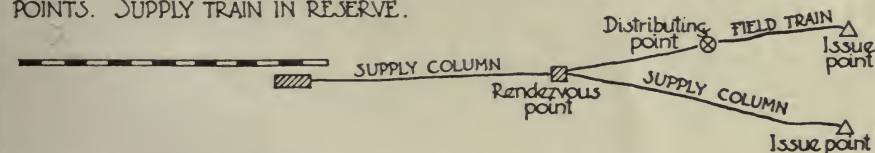
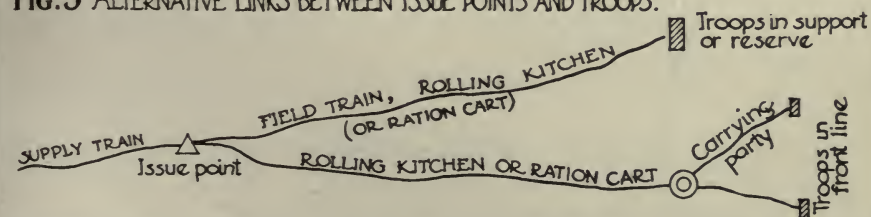
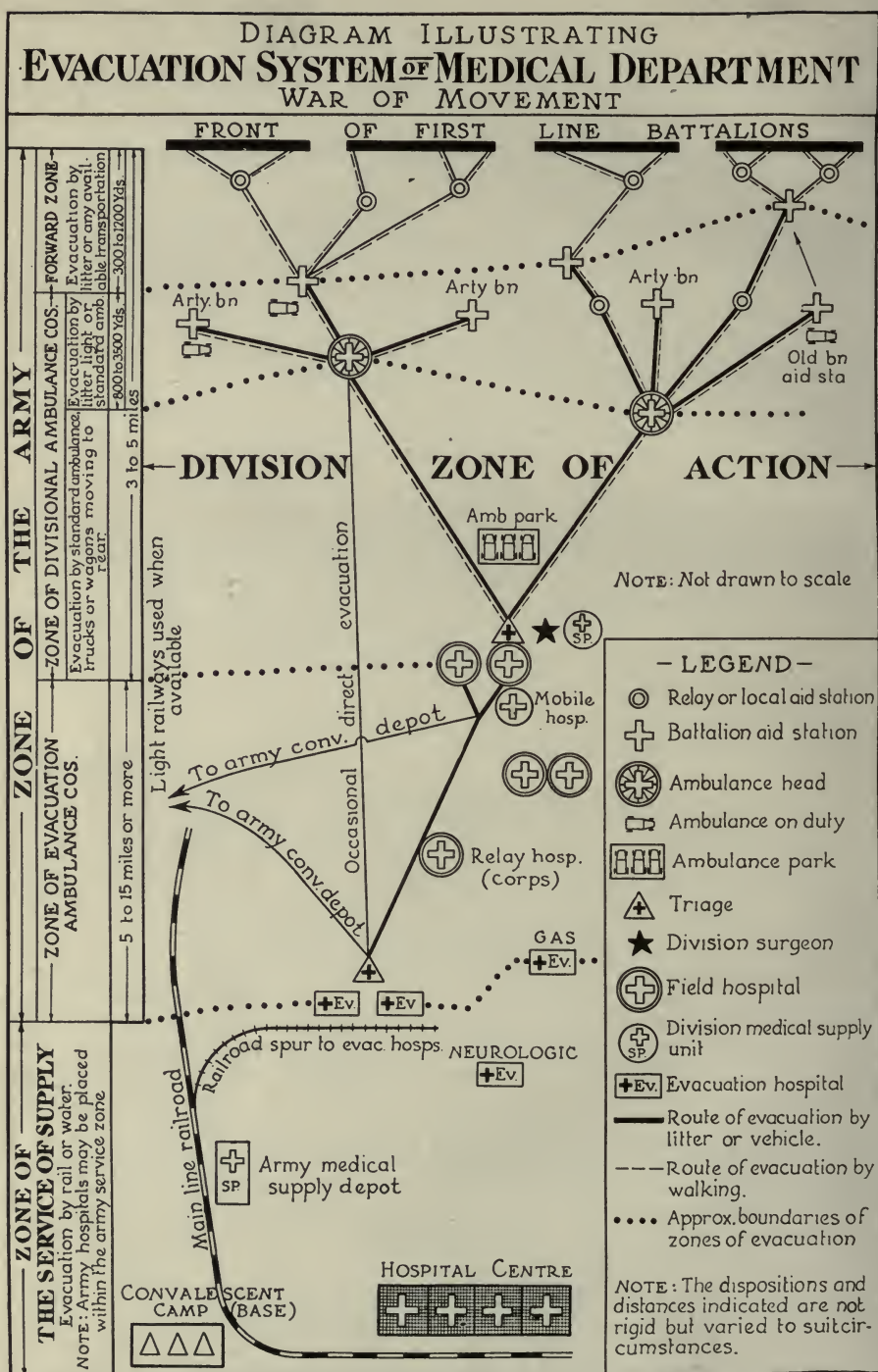


FIG.5 ALTERNATIVE LINKS BETWEEN ISSUE POINTS AND TROOPS.





The wounded are moved to the rear by a series of relays (although a wounded man is never removed from his stretcher during transport). The system of evacuation of the medical department is illustrated in outline in Plate 17.

Prisoners. Prisoners are turned over by each unit to the next superior headquarters. They are sent to the rear under small guards, slightly wounded men being used when practicable.

Stragglers. It is the duty of all officers and non-commissioned officers to prevent straggling. The best place to check straggling is *at the front*, and the duty falls upon the leaders of the fire units, who know their own men. It is much easier to prevent straggling in the first place than to reassemble stragglers or skulkers and return them to their command.

Special patrols, preferably commanded by officers, are detached from reserves to search localities where stragglers are apt to assemble.

Stragglers have a tendency to assemble around supply points and especially kitchens, and here they may be rounded up. In moving to the rear there are certain points, such as bridges and road junctions through which stragglers must pass. Military police should be stationed at such points to intercept them.

Stragglers are assembled, sorted and returned under guard to the next forward headquarters to which they pertain. For example, stragglers picked up by the regimental police are sent forward to the battalion headquarters. Here they are distributed to the companies to which they belong.

ELEVENTH LESSON.

FORMS OF ATTACK.

There are two general forms of attack which are known as *frontal* and *enveloping*. The frontal attack, as the term implies, is one in which the opposing lines are parallel or nearly so, and the attacker advances straight to the front against the defender's line with the intention of forcing it back or piercing it. In the enveloping attack the assailant endeavors to overlap one (or both) of the flanks of the defender's position by converging fire and movement. These two forms are illustrated in Plates 18 and 19.

Relative Advantages of Frontal and Enveloping Attacks.

A straight frontal attack has the advantages of simplicity, speed and directness. It is a conservative procedure often involving less risk of disaster to the attacker. It has the disadvantages that it is apt to be exceedingly costly and that it does not promise as decisive results as an envelopment. A frontal attack, if successful, will force the enemy back, but will not always encompass his complete defeat. It is not as favorable for the development of fire superiority as a converging movement.

The enveloping attack has the advantage of being more decisive if successful. Long experience in warfare has proven that the flanks of a defensive position are its weakest parts. The attacker will, therefore, whenever practicable, seek to envelop the flanks by a converging advance. An attack squarely against the defender's flank will not ordinarily be practicable, and will generally involve considerable risk of counter attack on its exposed flank. It may be employed under favorable conditions, but the usual procedure will be an oblique movement encircling the flank. (Fig. 2, Plate 18.)

It is usually essential to the success of an enveloping attack that the defender be attacked in front. In fact an enveloping attack is understood to mean a combination of frontal attack and envelopment. The frontal attack serves to hold the defender to his position and prevent him from changing front to meet the envelopment. It is accordingly sometimes called the "holding attack." The characteristic envelopment accordingly includes a frontal attack combined with a converging or enveloping movement against the flank.

INFANTRY ATTACK DISPOSITIONS

ENVELOPING ATTACK AND TURNING MOVEMENT

FIG. 1 ENVELOPING ATTACK

Insufficient separation and too obtuse an angle between frontal and enveloping attack

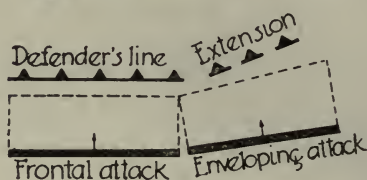


FIG. 2 ENVELOPING ATTACK

Sufficient separation and proper angle to insure envelopment. Attacks close enough to insure co-operation and mutual support.

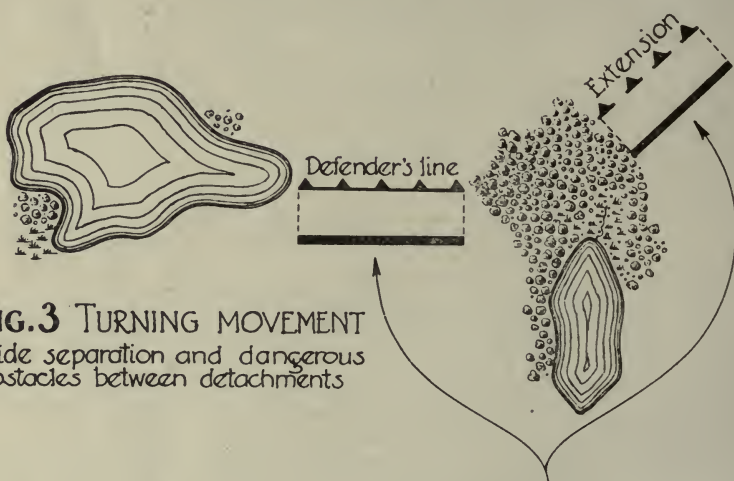
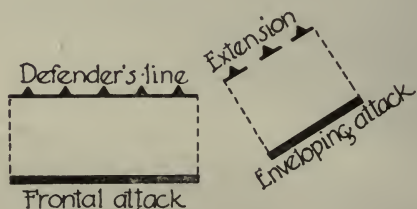


FIG. 3 TURNING MOVEMENT

Wide separation and dangerous obstacles between detachments

FIG. 4 ALTERNATIVE LOCATIONS OF GENERAL RESERVES

[A] Favorable for extension of envelopment. Does not well protect frontal attack or guard interval
 [B] [C] Conservative location guarding both attacks and interval
 [D] [D] Division of reserves between two attacks



An envelopment of both flanks of the defender's position is usually inadvisable. It is apt to result in a dispersion of the attacker's forces, a lack of proper concentration of effort, and a necessity for co-ordinating three more or less separated operations. It will generally be better to concentrate against the defender's weaker flank. A threat against this weak flank is most apt to induce the defender to withdraw from his position and will most embarrass such withdrawal.

Positions of limited and of unlimited extent. If the attack be directed against a portion of an extended position, as will frequently be the case in the operations of large forces, it might appear that an enveloping attack would be impossible, as no flanks would be presented. The attack as a whole must be frontal, at least at the outset. As the attacker enters the terrain occupied by the defender and effects local penetrations, the defender's front is broken into a number of sections, each presenting flanks which may be enveloped. Enveloping tactics will therefore be the rule in the local combats which constitute a general engagement. Our organization is based on such tactics. (Fig. 4, Plate 19.)

In the operations of small forces the defender occupies a position of limited extent. He will, when practicable, seek a position whose flanks rest upon impassable obstacles, thus compelling the assailant to make a frontal attack. (Fig. 1, Plate 19.) In any case the defender will endeavor to rest his flanks in terrain favorable for their defense and unfavorable to envelopment. (Fig. 3, Plate 18.)

The attacker can seldom march around either flank of the defender's position, unless the latter has been very carelessly selected, as he would thus leave the defender free to move and would expose himself to attack in flank. He will therefore pin the defender to the ground by a frontal attack, and envelop one of his flanks.

Selection of Flank for Envelopment.

In selecting the flank to be enveloped the attacker will be guided by the following considerations:

a. Against which flank can an attack more quickly be launched? Time is always an important consideration.

b. On which flank is the terrain most favorable to the attack, and most unfavorable to the defense? This will involve many considerations, such as cover for the attack, natural obstacles, observation, field of fire, artillery positions available, nature of defender's preparations, etc.

c. Where is the enemy's line of retreat and from what direction would his reinforcements probably arrive? The defender will give way more readily from an attack which threatens to separate him from his line of retreat or reinforcements.

d. In view of the terrain and the positions or probable positions of supporting troops on both sides, the attacker's own line of retreat, etc., which flank involves the least risk in case of a possible check or reverse?

e. Which flank allows the more favorable disposition of the attacker's troops, especially his infantry?

These considerations will usually indicate the flank most favorable for attack. Generally the attacker will envelop that flank which is most promising of success. If both are promising he should select that which will give the most decisive results in case of success.

In Fig. 2, Plate 19, the defender occupies a position at *CD*. His reserves are at *R*, and his line of retreat is along the road *AB* towards *B*. The attacker is approaching from the defender's right front. The defender's right flank (*C*) can be most promptly attacked, and is farthest from his reserves (which are placed to cover his retreat). But an envelopment of this flank, even if successful would probably not compromise the defender's retreat. An attack against the left flank (*D*) will require more time. It is more risky, as the defender's reserves are close at hand, and the outer flank (of the attack) is more exposed to any of the defender's supporting troops, which would probably advance by the road *AB*. But an attack on this flank threatens the defender's retreat. He will be more apt to give way, and if the attack is successful, decisive results are practically certain. The attacker therefore decides to envelop the left flank (*D*).

INFANTRY ATTACK DISPOSITIONS

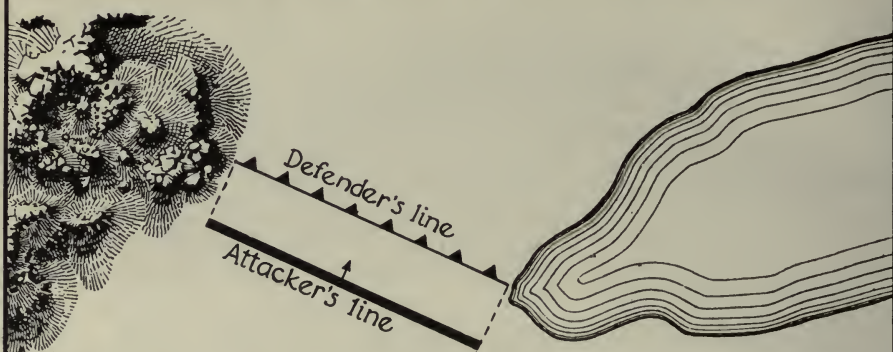


FIG. 1 CASE IN WHICH ENVELOPING ATTACK IS IMPOSSIBLE

FIG. 2 CHOICE OF FLANK FOR ENVELOPMENT

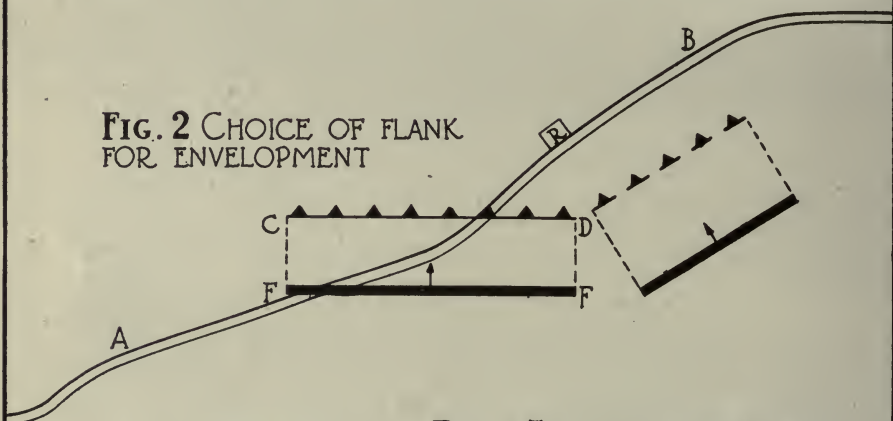


FIG. 3 EXTENSION OF FRONT IN PENETRATION

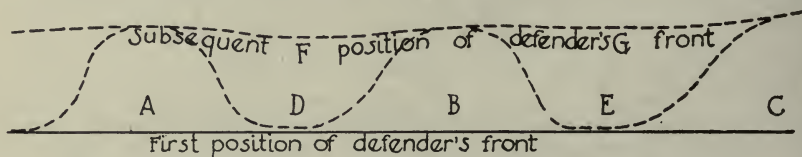
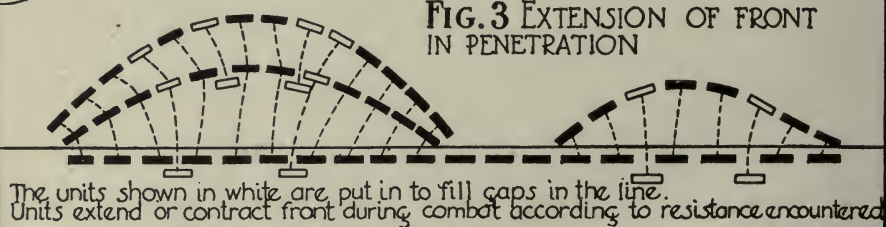


FIG. 4 PENETRATION AND REDUCTION OF SALIENTS

In the attack of a position of limited extent envelopment should be provided for in the first deployment, as it is difficult to rectify incorrect dispositions after the attack is launched.

Separation of frontal and enveloping attacks. The enveloping attack should have a sufficient separation from the frontal attack, and should aim well to the rear so that it may be truly enveloping. Otherwise it becomes merely an extension of the frontal attack, and the advantages of convergence and envelopment are lost. (Figs. 1 and 2, Plate 18.) On the other hand there is grave risk involved if the frontal and enveloping attacks are so separated by distance or natural obstacles that they cannot be properly co-ordinated nor mutually supported. (Fig. 3, Plate 18.)

The frontal attack should generally cover the entire known front of the hostile position, the inner flank of the enveloping attack being directed approximately at the flank to be enveloped. Accordingly there may at first be none of the defender's troops opposite the enveloping attack, but he may be expected to extend his lines to meet it.

Timing the attack. The two attacks are usually launched simultaneously. Occasionally, however, especially in the operations of small units, the frontal attack is launched first, to develop the enemy's resistance and hold him to the ground. If the defender can be fully engaged by the frontal attack, and especially if he can be forced to commit his reserves to meet it, the enveloping attack may then be launched later as a surprise.

Relative strength of frontal and enveloping attacks. The enveloping attack will usually be the decisive attack. Accordingly it should be stronger than the frontal or holding attack. This does not mean that it must be stronger in total numbers, but it should have a greater density of deployment, that is, stronger supports and reserves. For example, in a regimental attack, having regard for the principle of the integrity of tactical units, one battalion might be assigned to the frontal and one to the enveloping attack. The latter battalion, however, would deploy on a narrower front, with stronger supports and reserves.

Employment of the reserves. The general reserves of a unit making an enveloping attack will ordinarily be employed to reinforce or extend the front of the enveloping attack, and should be placed to facilitate their employment for this purpose. However it cannot always be foreseen which of the attacks will actually be decisive. If the enveloping attack encounters unexpected resistance and suffers a check, it may be better to employ the reserves to push home the frontal attack. The frontal attack should always be vigorously pushed, since if it becomes apparent to the enemy that it is not intended to be decisive he will contain it with a relatively small portion of his force and concentrate his efforts against the enveloping attack. If in so doing the defender unduly extends his front it may be possible for a strong frontal attack to piece his attenuated lines.

A position in rear of the inner flank of the enveloping attack is a conservative location for the reserves, as they can here guard the interval between the two attacks, and may be readily employed to reinforce either attack. Fig. 4, Plate 18, indicates a number of alternative positions of the reserves at the opening of an enveloping attack. A division of the reserves between the two attacks would seldom be wise.

Enveloping tactics of small units. Enveloping tactics will be employed by forces of all sizes in both open and stabilized warfare. They will be especially characteristic of the local operations of small units in open warfare. Generally the platoon is the smallest unit to habitually employ such tactics. Its support section should be used for envelopment whenever it is practicable to do so. To reinforce or "thicken" a frontal attack which has been held up by hostile resistance will often have no result except to increase losses, and opportunities for envelopment should always be sought. (Plate 20.) The choice of flank for envelopment will be governed chiefly by the facilities afforded by the terrain. In the deployment for attack intervals are usually left between adjacent units to permit of maneuver and enveloping tactics.

The enveloping tactics of small infantry units are discussed in detail in the lessons following.

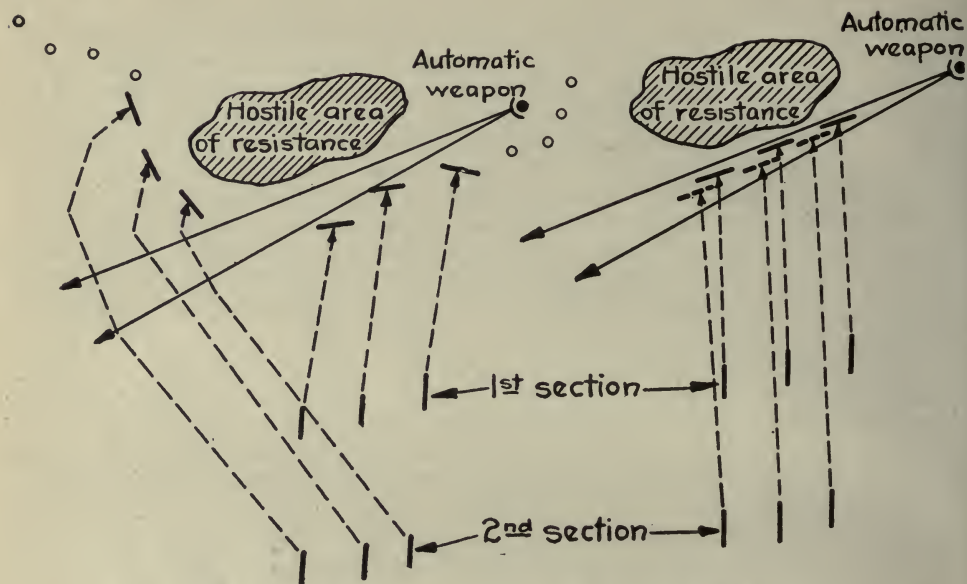


Fig. 1. The right way

Fig. 2. The wrong way

PLATE 20.—Enveloping Tactics in Platoon Attack.

FIG. 1.—The Right Way. The assault platoon has been held up by a hostile resistance. The leading section extends in irregular formation, avoiding the dangerous front and engaging the automatic weapon. Scouts work around the automatic weapon. The platoon leader, after a personal reconnaissance of the situation, envelops the weaker flank of the area of resistance with the support section, avoiding the fire of the automatic weapon. Scouts guide and cover the movement.

Results: Large arc of converging fire is secured and a corresponding divergence of the defender's fire, resulting in greatly increased pressure on the defender and fewer casualties for the attacker.

FIG. 2.—The Wrong Way. The assault platoon has been stopped by a hostile resistance. The leading section pushes forward. The platoon leader commits the support section on the same line as the leading section, with no attempt to envelop, no effort to engage automatic weapon, and using no scouts.

Results: Mixing of units, confusion in command, little additional pressure on defender and additional casualties for attacker due to crowding of men on dangerous front.

Situations calling for frontal attack. While the enveloping attack will thus be the most usual form, especially in open warfare, there are cases where the straight frontal attack may be employed to advantage.

a. In an attack made with a rolling barrage of artillery fire. A barrage cannot be adjusted to enveloping tactics on a small scale. So long as it is effective, the infantry should advance straight to the front following closely behind the barrage. The attack will usually later break up into a number of local actions involving enveloping tactics.

b. If the enemy is holding a position which is poorly organized or lightly manned, or both, a frontal attack will usually be the quickest way to penetrate the attenuated line. The usual objection to a frontal attack, that it is unduly costly, does not hold in this case. Such attacks are characteristic of pursuit and exploitation.

c. If the enemy's strength and position are uncertain a frontal attack may be made to develop his resistance. It can be launched promptly and involves less risk than a

more complicated maneuver. It need not be pushed to a decision if this appears inadvisable, and an enveloping attack may be launched later when the situation is more clear. Such tactics would be characteristic of the operations of an advance guard on first encountering the enemy. As the troops of the main body came up they would be employed to envelop one of the hostile flanks.

d. In a recontre engagement. In this case a great advantage is with the combatant who can most promptly come into action. If time be taken to organize an enveloping attack the opportunity to seize the initiative may be lost or the enemy, if weaker, may be able to evade the conflict. A prompt frontal attack seizes the initiative and pins the enemy to the ground. An enveloping attack may be launched later if developments call for it. A frontal attack involves the least dispersion of force, and is the most conservative in an uncertain situation.

Turning movements. An enveloping attack which is so far separated from its supporting frontal attack by distance or obstacles of the terrain, as to render co-ordination and mutual support difficult or impossible, is called a turning movement. It is a dangerous form of dispersion of force, and is usually to be condemned in the operations of small forces, whose separated parts are too easily overwhelmed by superior force. Turning movements will continue to find favor with bold commanders since they frequently promise decisive results in case of success. (Fig. 3, Plate 18.)

A wide turning movement should seldom be undertaken by a force less than a division except in the operations of the cavalry.

Turning movements and enveloping attacks demand a high degree of mobility or power of maneuver on the part of the troops executing them. Green or imperfectly trained troops lack mobility, and grave danger is involved in their employment in enveloping operations.

GENERAL PROBLEMS OF THE DEFENSE.

The mission of the defender is to defeat the aims of the attack. Most of the problems which confront him will be similar to those of the attacker. For example, the defender has at least equal need for accurate information of the enemy. To a greater extent than in the case of the attack the defender's plans will be based on his knowledge of his enemy. When he learns that an attack is impending the defender will assemble his resources to oppose it. His problems of concentration and supply are similar to those of the attack. The defender may even employ the element of surprise by meeting the attack with unexpected strength, secretly assembled.

In two very important respects the defense differs radically from the attack. The initiative remains usually with the aggressor, and whereas the mission of the attack is continually to advance, that of the defense is usually to maintain itself in its position. This stationary attitude of the defense has a number of advantages. It greatly simplifies the problems of maneuver, intercommunication, supply, etc. It makes less demands upon the troops. The defense does not require as great mobility and endurance nor as high a degree of training as the offense. Troops which can successfully attack can successfully defend. It is for this reason that greater stress is laid upon the training of troops for the offensive.

It has been frequently pointed out that, in the long run, decisive results cannot be achieved by a passive attitude. A successful defense may gain a temporary advantage and often paves the way for aggressive action. In this respect a combatant in war is like a boxer. A defensive attitude will occasionally, though not often, stave off defeat, but it will never gain a decision.

The defense should accordingly be regarded as simply a prelude to or interlude in the attack. Its chief purpose is to economize forces in one locality in order to permit the concentration of superior forces at more important localities, and such superior forces should always be used for aggressive action. In this way alone may a skilful defense contribute to ultimate victory.

Passive and active measures in defense. So necessary to success are initiative and aggression that even the defense does not limit itself to purely passive measures, except in certain cases of retreat or delaying action, where a temporary check to the attacker's advance is the only object sought. Often a vigorous attack will be the best defense. In all cases where the defender's mission demands a positive check of the attacker's advance, active as well as passive measures are employed. The defender's problem is to hold his ground against all efforts of the attacker to dislodge him. This he accomplishes by a passive resistance with fire. If the attacker succeeds in effecting a lodgment in the defender's position the latter expels him from the territory thus gained by counter attack on a greater or less scale according to the situation. The counter attack is conducted in all respects like the attack. Fire superiority is the keynote of success in defense as in attack, and the defense like the attack, involves both fire and movement. In lieu of the initiative enjoyed by the attack the defender has generally the opportunity to avail himself of the natural advantages of the terrain, and to strengthen it by works of field fortification.

Advantages and disadvantages of the defensive. To summarize then, the disadvantages of the defense are:

1. Surrender of the initiative to the attacker, with all that this implies.
2. Moral effect of a passive attitude and a sense of inferiority.
3. Decisive results are not achieved, even by an entirely successful passive defense.

Its advantages are:

1. The problems of control, intercommunication, supply, reinforcement, etc., are greatly simplified as compared with the corresponding problems of the attack.
2. The defensive does not require as high a degree of training, mobility and stamina as the attack. Troops which would not be suitable for attack may give a good account of themselves in defense.
3. The defender will ordinarily have opportunity to take fuller advantage of the natural features of the terrain than will the attacker, and he will also have opportunity to strengthen his position by works of field fortification.
4. The defender will be more familiar than the attacker with the terrain in which the combat takes place.

Field fortification, which forms so important an accessory of the defense, is covered in the course in Field Engineering. It is, however, only an accessory. The essential requirement of a proper defense is a proper disposition of troops. This having been made, works of field fortification are installed to conform thereto.

The elastic defense. The active defense, like the attack, is characterized by organization in depth of all its elements. The attacker must be made to fight his way through a deep defended zone. Like the attack also the active defense should be characterized by mobility and elasticity, though of course to a lesser degree. Elaborate works of field fortification should not be allowed to tie the defender to the terrain, thereby still further emphasizing the lack of initiative under which he inevitably suffers. On the contrary good works of field fortification should increase the mobility of the defense and permit the exercise of a degree of initiative. If the works of field fortification are skilfully selected and located and well and solidly constructed, they may be successfully defended with a comparatively small number of troops, leaving the bulk of the defender's forces for mobile reserves, to be employed aggressively in the counter attack.

The ideal active defense is thus characterized by skilfully located and well-constructed works of field fortification, lightly manned for passive defense (by fire), and strong, mobile reserves available for the active measures of counter attack.

The relatively immobile nature of the passive element of the defense, and the opportunity to artificially strength the terrain, afford facilities for a more effective use of machine guns than is possible in attack. This weapon is accordingly a most important element of the passive defense.

In this course we are concerned primarily with the proper dispositions of the troops and their conduct of the passive defense. The organization of the ground

is discussed in detail in the course in Field Engineering. The active measures of the defense, that is to say, counter attacks, are conducted in accordance with the principles governing the attack.

Let us now take a very general view of the characteristic tactics of the defense.

TACTICS OF THE DEFENSE.

Every combat, whatever the size of the forces engaged or the circumstances under which it occurs, takes the form of the attack of a position, in which one combatant (the attacker) advances against the position and endeavors to obtain possession of it, while the other (the defender) occupies the position and endeavors to repel the attack.

The position may be very highly organized, including many lines of carefully constructed trenches, obstacles, shell-proof machine gun emplacements, observation posts, etc. On the other hand it may, by reason of lack of time and opportunity on the part of the defender, include no artificial works other than pits hastily dug for the shelter of individual riflemen or machine guns. In any case the defender avails himself of the shelter and other advantages afforded by the terrain in its natural state, as far as possible.

The defender may have no intention of contesting the possession of the ground when the attacker has reached the position. In this case he seeks a position allowing long range fire to the front, thus forcing the attacker to deploy and open the fire fight. Before the attacker has advanced to a locality from which an assault on the position is possible or from which he can compromise the defender's retreat, the latter withdraws. Such a defense is known as a delaying action and is usually undertaken to cover the retreat of a larger force.

In a decisive action, however, the defender contests the possession of his position by the attacker, both on the front of the position and within the area or zone which he occupies.

When opportunity affords the defender selects a position favorable for defense and artificially strengthens it to the extent that time and facilities at his disposal permit.

The troops of the defender are disposed in this position in accordance with a definite scheme of defense. In brief this is as follows:

Defensive Areas.

Having selected the general line on which he will offer resistance the defender picks the small areas along this line which lend themselves to defense. These will be localities which afford a good field of fire to the front and flanks, usually slightly elevated above the adjacent terrain, and affording natural concealment, shelter and approach from the rear. Each of these areas should be able to protect its own front, flanks and even its rear with fire, and adjacent areas should be mutually supporting, that is, each should be able to cover with oblique or flanking fire the fronts and flanks of the next adjacent areas on either side. This means generally that they should not be over 300 to 400 yards apart, and even less in very close terrain. Their actual locations, however, will be fixed by the nature of the terrain.

In rear of this advanced line of defensible areas there may be one or more similar lines. These rear areas are so located as to cover with their fire the flanks and rears of the areas in front of them. They are also mutually supporting, and can continue the defense in depth, in case the areas in front of them are captured by the attacker.

Combat groups. Each of these defensible areas is held by a small garrison. They may include machine guns, if the particular locality affords a favorable field of fire for same. They always include riflemen. Usually they will be garrisoned by a rifle platoon or section, exceptionally by a single squad, always, if possible, by complete fire units (squads or sections). The size of the areas may vary from about 50 x 50 yards to 150 x 200 yards or exceptionally more. These small garrisons are known as combat groups. Their functions are:

MUTUAL SUPPORT OF DEFENSIVE AREAS AND ORGANIZATION IN DEPTH

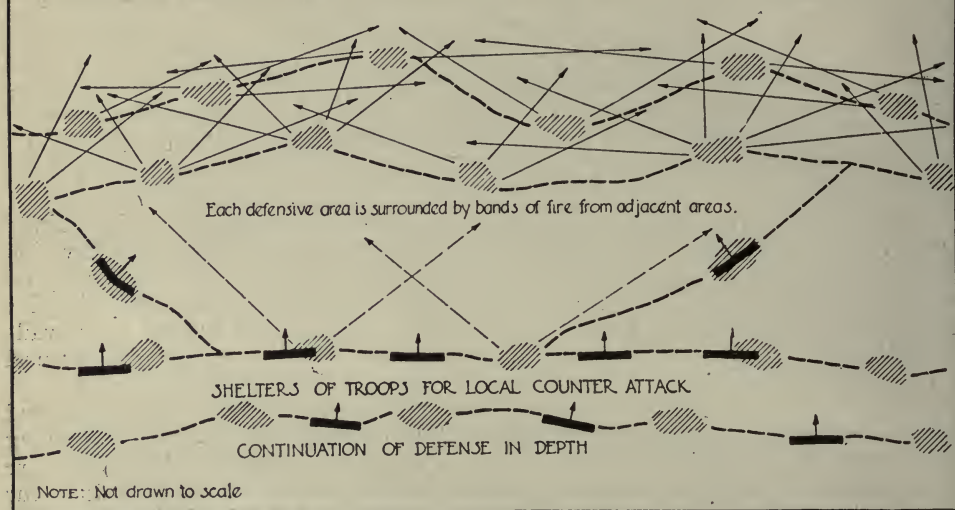


PLATE 21.

1. To oppose the advance of the attacker by frontal fire, endeavoring to inflict such heavy losses that he will be unable to reach the position.
2. To cover and protect the fronts and flanks of adjacent areas on either side, and to sweep with fire the unoccupied ground between groups.
3. Finally, to hold the ground occupied, even when the attacker has reached, and perhaps penetrated the position, by fire to their fronts, flanks, and even to the rear, and by close combat within the areas.

The active defense. The foregoing constitutes what is called the *passive defense*. The defender also employs more active measures, in the form of counter attack against any elements of the attack who may have entered the position.

To maintain the continuity of the defense, and to provide for the active measures of same, a number of combat groups, either on one line, or more, are grouped to form a *strong point*, under a single commander. An appropriate garrison for a strong point is a company. It may include from two to four combat groups. In addition to the small garrisons of the defensible areas a strong point includes a support, for example, one platoon of the company. This support is used by the commander to reinforce the threatened points within the area assigned to him, and for counter attack to expel any of the enemy who may have gained a lodgment in his area. These counter attacks should be delivered promptly as a surprise, if possible against the flanks of the enemy, and should be supported by the fire of the combat groups which are in a position to do so.

The larger units of the defense, battalions, regiments, etc., hold reserves which are used to reinforce the companies in the forward part of the position, and to deliver counter attacks on a large scale.

The defensive position may be greatly elaborated, improved and strengthened by trenches to permit better fire, and covered communication, obstacles to delay the attacker under the fire of the defense, shelters for the protection of the troops, etc. These works, however, do not alter the fundamental scheme of the defense.

Summary. To summarize then, the active defense includes:

1. A number of small defensible areas each occupied by a fire unit, capable of defense to the front, flanks and rear, adjacent areas supporting each other by fire,

the whole being so arranged as to cover by fire all the ground over which the enemy must advance.

2. Grouping of a number of small areas into larger areas, including supports and reserves for reinforcement and counter attack.

In the conduct of his defense the defender first opposes the advance of the attacker by frontal fire, endeavoring to prevent him from reaching the front of the position. As the attacker reaches the front of the position he receives, in addition to frontal fire, cross and flanking fire from the small defended areas. If he attempts to enter one of the areas he is opposed by fire from front and flank, and by the close-in defense of the garrison of the area. Finally, if he succeeds in gaining a footing, he is expelled by counter attack of mobile supports or reserves, aided by the fire of the area garrisons and by accompanying weapons and artillery, when practicable.

The secret of a successful defense is in each area garrison maintaining itself in the area assigned to it. The determined resistance of a few combat groups has often brought about the collapse of an attack which had penetrated even to their rear.

Observation, circulation and intercommunication. The defensive position, to whatever extent it may be artificially strengthened, should always provide for observation to the front and within the position, facilities for the movement of troops from one part of the position to another, covered as far as possible from the enemy's view and fire, and arrangements for intercommunication between the various elements of the defense. It is usually easier to provide these facilities in defense than in attack. The commander of each defensive area (combat group or strong point) should have one or more sheltered observation posts from which he can observe the ground in all directions, the conduct of his own command, and the situation to his front, flanks and rear.

Field of fire. The field of fire to the front should be as wide as practicable, at least 400 to 500 yards, with a minimum of cover for the attacker. The firing line should not (except in delaying action) be greatly elevated above the field of fire, thereby producing a plunging effect and sacrificing the advantages of grazing fire and long danger space. (See Theory of Fire, course in Musketry.)

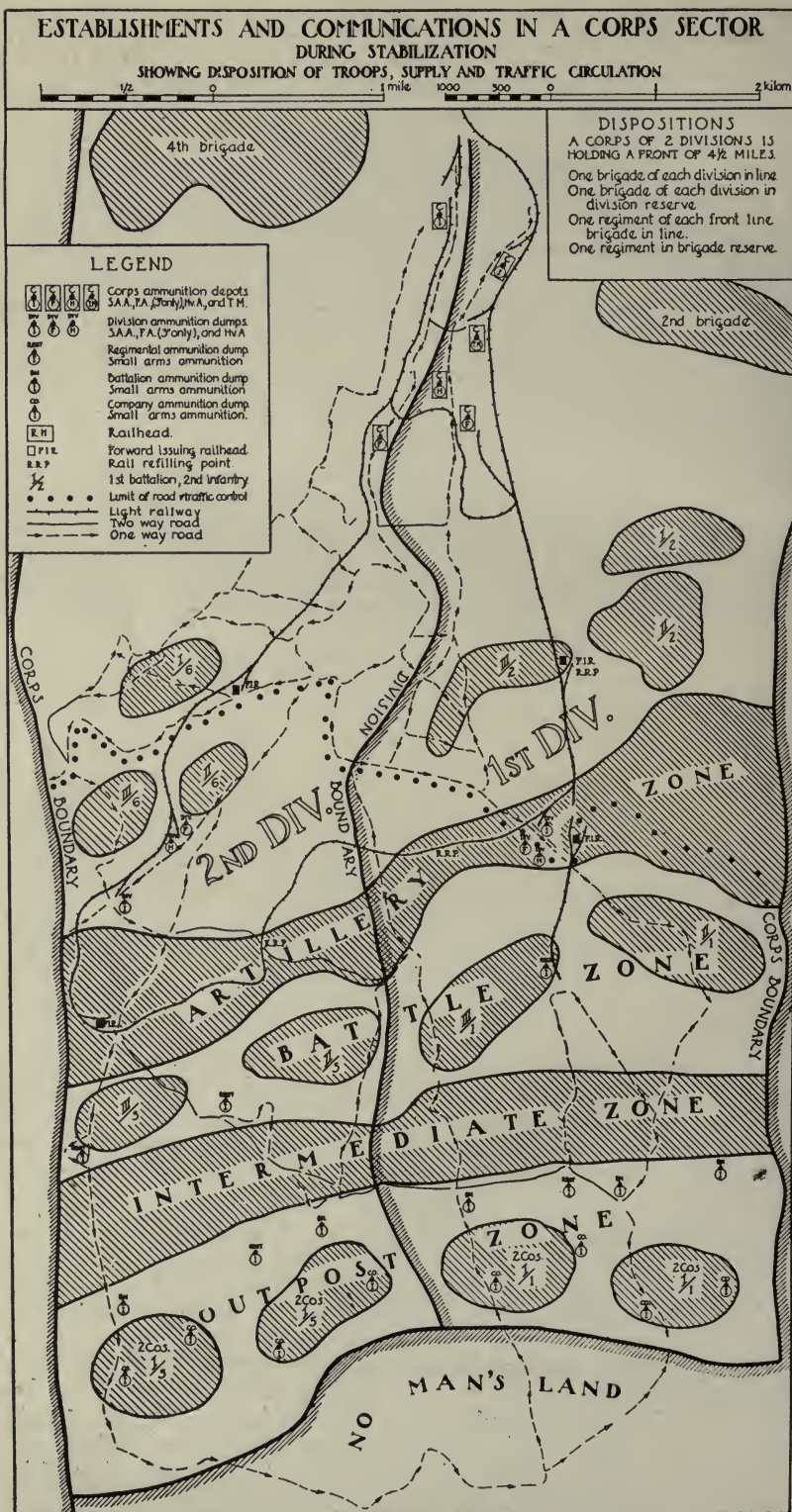
Successive positions. On important fronts, whose integrity is vital to the success of the campaign, the defender does not place his reliance upon a single position, but organizes a number of successive positions, each complete in itself. In case of the loss of a forward position, the defender retires to and continues his resistance in the one next in rear. The unorganized zones between positions constitute "barrage zones" in the defense of the positions in rear.

Accessory establishments of the defense. In a fully organized position the accessory establishments of the defense, including command and observation posts, systems of intercommunication, dumps and depots of various kinds, routes of transport and troop movement, etc., are carefully located and installed. The service of these facilities is, in general, more effective and better controlled in defense than in attack.

Tactics of the auxiliary arms in defense. We have referred briefly to the importance of machine guns in defense. When these weapons are available they are carefully disposed to sweep the avenues of approach to the defender's position, and to cover its front with oblique bands of fire, known as "flankments." (See course in Field Engineering.)

The artillery of the defender is massed in rear of the zone of infantry defense. It participates in the defense:

a. By counter battery fire and counter preparation. This is a bombardment directed against the artillery, miscellaneous establishments, routes of communication and transport of the attack, against his troops massed for the assault, and in general against all elements of the attack. The purpose of this fire is to demoralize the attack as far as possible, especially before it is actually launched.



ARTILLERY DEFENSIVE BARRAGE SCHEMES

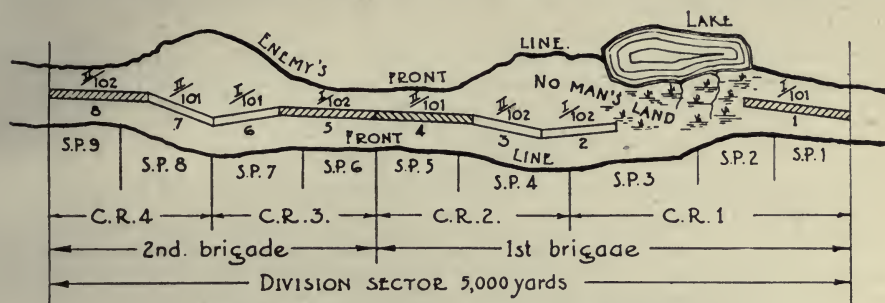


FIG. 1 NORMAL AND CONTINGENT BARRAGE ON A DIVISION FRONT.

1ST SITUATION

- LEGEND**
- S.P. Strong point.
 C.R. Center of resistance.
 Normal barrage.
 Contingent or superposed barrage.
 2nd bn. 102nd F.A. (3in), etc.

NOTE

In case of raids or local attacks a barrage is laid on any portion of the front. In case of a general attack only the normal barrage with density of 1 gun per 50 yards front, is employed opposite most dangerous portions.

2ND SITUATION

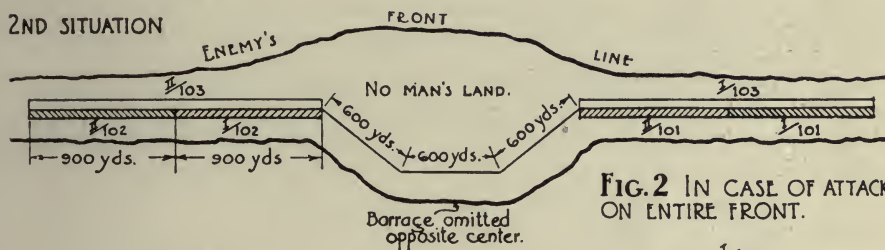


FIG. 2 IN CASE OF ATTACK ON ENTIRE FRONT.

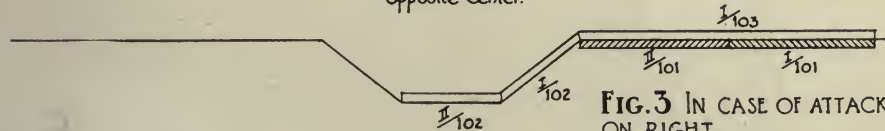


FIG. 3 IN CASE OF ATTACK ON RIGHT.

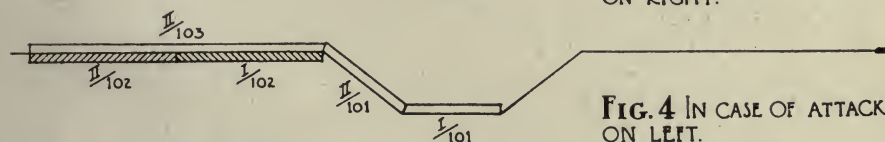


FIG. 4 IN CASE OF ATTACK ON LEFT.

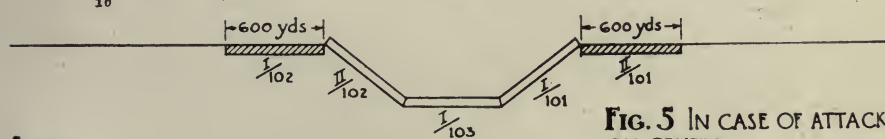
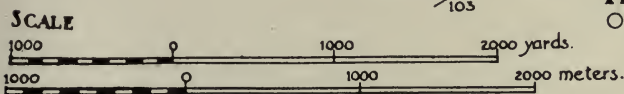


FIG. 5 IN CASE OF ATTACK ON CENTER.



b. By barrage. The defensive barrage is a wall or curtain of fire (high explosive shell, shrapnel) laid upon the terrain immediately in front of the defender's infantry, and through which the attacker's troops must pass to reach the defended area or position.

The defense is so organized that machine gun fire, artillery bombardment or barrage, may be laid upon the front of the position or any portion thereof, at any time of day or night, upon signal from the infantry. (See Plate 23.)

TWELFTH LESSON.

INTELLIGENCE.

We have seen that the estimate of the situation and the resulting plan of action of the commander are based very largely on his knowledge of the conditions which confront him. A commander who is not informed as to the situation manifestly cannot correctly estimate it, nor formulate an intelligent plan of action. This is more true at the present time than ever in the past.

The Intelligence Service.

Intelligence is of such importance that in battalions and higher organizations a special unit is organized to collect, interpret and disseminate it. The leaders of the small infantry units (company, platoon and section) are close to the enemy, on the terrain in which their units are operating. This terrain is so limited in extent that personal reconnaissance by the leader and his immediate subordinates, and the proper use of scouts and patrols, will furnish most of the information which the leader requires. Additional information is supplied by the organized intelligence section of the battalion. In the case of the larger units, the areas in which they operate are of such size that commanders cannot by personal reconnaissance alone gain all the information that is necessary, nor can they unaided analyze and disseminate this information.

Inasmuch as the battalion intelligence section operates primarily for the benefit of the smaller infantry units, and is also in large measure dependent upon them for the information it obtains, it is essential that the leaders of these small units be familiar with the organization and methods of procedure of this unit.

Nature of Information Required.

Information or intelligence, to be of value must be accurate; it must be as complete as possible; its source and authenticity or the degree of credibility to be attached to it must be indicated; it must be properly interpreted; and it must be arranged for quick reference. For example, information obtained by personal reconnaissance of a trained and reliable officer is entitled to a high degree of credibility. It is the best class of direct evidence, and is almost certainly correct. On the other hand information derived from prisoners is of the class known as "hearsay," and can be accepted only when corroborated by a number of individuals or from other sources. The sources of information should in every case be indicated. Deductions which may be drawn on the spot, as in questioning prisoners, should be reported, etc. The intelligence personnel is specially trained in collecting, weighing, interpreting and reporting information.

Information is of value usually in proportion as it is *fresh*. Certain items will exercise an immediate influence on the plans of the higher command, or on the actions of subordinate units. If delayed in transmission they may arrive too late to be of use. Other items of less urgency may be transmitted at stated intervals. The intelligence personnel is trained to determine the relative importance and urgency of the information it collects, to transmit vitally important information without delay, and on the other hand not to overload the lines of intercommunication by continuous immediate transmission of information whose urgency does not warrant such procedure.

The principal information required by the leader concerns: (a) The enemy; (b) his own forces; (c) the terrain. It is to the collection of information concerning the enemy that the efforts of the intelligence service are specially directed.

Classification according to priority of transmission. According to its importance and urgency this information is classified as follows:

A. Information of such importance as to require its immediate transmission to higher authority.

B. Information which is of value to higher authority, but not of sufficient importance to warrant immediate transmission.

C. Information which is of immediate interest only to the unit in which it is collected, or to its subordinate units.

Class A information is transmitted at once by the quickest available means of communication.

Class B information is collected, arranged and transmitted at fixed intervals, as every 12 or 24 hours. With these periodical reports should be included a repetition of all Class A information obtained since the last report, and any Class C information which is or may be of interest to the higher command. Information of special interest to subordinate or neighboring units is sent to them direct at such times and by such means as its importance and urgency may warrant.

Except in the case of messages from patrols the means of transmission of intelligence are the regular channels of intercommunication, through the message center of the organization, which is the "clearing house" for all intelligence. The personnel of the intelligence section is not sufficient to furnish the necessary runners, signalmen, etc., to transmit the information which it gathers. It arranges for the prompt transmission of the information, but is not charged with the operation of the lines of intercommunication.

Organization of Battalion Intelligence Section.

The intelligence personnel of the battalion is the intelligence section of the battalion headquarters company. It consists of the following:

- 1 1st lieutenant, mounted.
- 2 sergeants (chief observer and chief scout).
- 5 corporals (observers and scouts).
- 20 privates, 1st class, and privates (observers and scouts).

The lieutenant commands the intelligence section and is also the battalion intelligence officer (Bn. 2) on the staff of the battalion commander.

Duties of the Battalion Intelligence Officer. (Bn. 2.)

The battalion intelligence officer directs the patrolling and observation of the intelligence section, collects the information from all sources, digests, classifies and arranges it, and presents it in the form of reports to his battalion commander. He also sends to the front line companies and to adjacent units any information which may be useful to them.

The battalion intelligence officer's proper post is with his battalion commander or at the command post. When he has occasion to leave his post, as will often be necessary for personal reconnaissance, to dispatch a patrol or visit an observation post, the command post sergeant performs the necessary duties during his absence.

All messages and reports from front line units, patrols and observation posts should be sent promptly to Bn. 2, who classifies and arranges it for the information of the battalion commander.

Contact with the enemy having been established, the first duties of the battalion intelligence officer are:

1. Personal reconnaissance.
2. Dispatch of reconnoitering patrols.
3. Establishment of observation posts.

These three measures should be carried out simultaneously if practicable, and the sooner they are inaugurated the sooner will the battalion commander obtain the information necessary to the formulation of his plans.

The initial observation posts should be selected and manned at once. Accordingly it is desirable that some intelligence personnel, a squad for example, should accompany the advance guard of the battalion, marching with the support. They note localities favorable for observation, so that they can promptly establish their stations when contact is gained.

As the attack progresses the observation posts are advanced by bounds. New posts are reconnoitered and occupied, and the initial posts are abandoned when they are too far to the rear to be of use.

Coincident with the establishment of observation posts patrols are dispatched by Bn. 2.

In a general way the information desired by the battalion commander will be the answers to the questions:

Where is the enemy? Especially where are his flanks?

What are his strength and the composition of his forces?

What weapons has he?

What works of defense has he installed?

What is he doing?

What are his probable intentions?

This information the intelligence personnel must secure and transmit without delay to the battalion commander.

Sources of Battalion Intelligence.

The battalion intelligence officer is the center of information for the battalion. He derives his information from all available sources. These will include:

1. Patrols, either wholly or partly intelligence personnel.
2. Observation stations manned by intelligence personnel.
3. Front line companies.
4. Adjacent organizations.
5. Prisoners, deserters, and local inhabitants.
6. Captured documents, maps, equipment, uniforms, etc.

Of these 1, 2, 3, 4 are classified as *direct* and 5, 6 as *indirect* evidence.

In addition to the foregoing the battalion has at its disposal the information contained in the intelligence bulletins and summaries, maps, etc., issued by the higher units. Special communications will be sent by the higher commands to subordinate units conveying information presumed to be of special value to them.

Relative value of sources. Information from above may or may not be classified as "reliable" or otherwise. Its source and authenticity are usually not definitely stated. Such information should never be accepted without question, but should be verified by the more direct methods open to the smaller units who are in more intimate contact with the enemy and the terrain.

The battalion intelligence officer must judge the authenticity of the source and the corresponding weight to be given the information received.

Generally the most reliable as well as the most timely and valuable information will be that obtained from reconnaissance, *i. e.*, patrolling and observation, by the intelligence personnel.

Next in value will be reports from the front line units, especially reports of personal reconnaissance by competent officers. It has been found by experience, however, that this is a source of information not to be greatly depended upon. The leaders of the front line units have difficult and pressing problems of their own, and are too often prone to forget the battalion commander's need for information as to the progress and development of the action. Their messages usually are limited to matters of special importance to themselves alone, such as requests for reinforcements, ammunition and supplies. Information, if given, is generally for the purpose of insuring compliance with the subordinate's request, rather than to assist the higher command in correctly estimating the situation.

Situation reports. This is one reason why an organized intelligence service is necessary. But subordinate leaders should be required to render "situation reports" to their immediate superiors at stated intervals. These reports should set forth the situation of the unit at the time, and a résumé of important events since the last such report. Forms for these reports will be of assistance in insuring that matters of importance are not overlooked. The reports should, when necessary, be accompanied by maps and sketches.

The battalion intelligence officer, by personal contact with the subordinate leaders, should encourage them to report valuable information which they may obtain, pointing out the classes of information which are especially desired.

Location of the front line. One item of information of the greatest importance to superior commanders of every rank, is the position of the front line, in defense and especially in attack. The position of this line is constantly changing, and from its location at any instant the division commander, for example, determines the progress (or lack of progress) of his attack up to that instant, where reinforcements, artillery support, etc., are needed, where his reserves can best be employed. It has been found from experience that reports as to the location of the front line from aerial reconnaissance are usually unreliable. In the stress of battle the front line units cannot be depended upon to mark their positions for the aviator, nor can the latter be depended upon to accurately plot the positions even if marked. About the best that the aviator can do is to locate the command posts of the front line battalions, and the higher command must then depend upon the reports from the battalion intelligence section, showing the positions of the front line with reference to the battalion command posts. This vitally important information can be obtained only from the small infantry units in the front line, or from the battalion intelligence personnel at the front. Situation reports from front line units should always give the location of the front line at the time of the report.

Prisoners. Prisoners who pass through the battalion command post should be briefly but thoroughly examined by Bn. 2 or an interpreter of the intelligence personnel, and searched for maps or documents. All prisoners taken by the battalion should be sent promptly to the command post. A brief examination here will often afford valuable information which otherwise would not be available, or would be received too late to be of use. The evidence of a single prisoner is not entitled to much confidence, but the cumulative evidence of a number will often afford valuable information. Intelligence personnel should be trained in methods of examining prisoners and the kind of questions to be asked. Stereotyped questions are usually less productive of results than a conversation in which the prisoner does most of the talking.

Personnel of the Intelligence Section.

The members of the intelligence section are selected because of their special qualifications. Their actual assignment to the various duties with which the section is charged will vary with the circumstances of each case, and there should be no rigid classification of the personnel according to the duties to be demanded of them. One sergeant is chief observer and has charge, under the direction of the battalion intelligence officer, of observation posts. The other sergeant is chief scout, and has charge of patrols. Either may be charged also with the preparation of reports and intelligence summaries, maps, the examination of prisoners, etc. A number of the men should be qualified as clerks. The remainder are assigned to duties as observers, scouts and messengers, as the situation demands.

When working among the front line units the intelligence personnel operate independently of these units, and are not in any way under the control of their leaders. They will furnish these leaders direct with any information which may be of value to them, and will refrain from interference with them, being careful not to betray their presence or movements to the enemy. Leaders of the front line units will afford the intelligence personnel all possible assistance in the performance of their duties.

Patrolling and Observation by Intelligence Personnel.

The principal duties of the intelligence section are patrolling and observation from ground stations. They are also charged with the duty of keeping records of information received and sent, and the preparation of reports, summaries and maps at the battalion command post.

The number of men in the section is small and their duties are important and varied. If reconnoitering patrols were composed exclusively of intelligence personnel their number would be decidedly limited. On the other hand a reconnoitering patrol which included no men specially trained for intelligence service might overlook information of value to the battalion commander. It is not always necessary that patrols should consist exclusively of intelligence personnel, and in many cases this would be a waste of this trained personnel.

It is accordingly frequently advisable to attach one or more men from the intelligence section to patrols sent out by advance or rear guards, and front line units. These men, by virtue of their special training are qualified to obtain information of importance to the battalion, to sift and weigh the evidence, and to verify and make deductions from it on the spot. They will be instructed in advance as to the information that is specially desired, but in addition will collect all other information of value, so far as possible.

When a large number of patrols is needed at one time, better results will usually be obtained by distributing the intelligence personnel amongst patrols composed chiefly of men from the front line units, than by sending out patrols composed exclusively of intelligence personnel, and others including no such men.

Patrolling and observation are not exclusively duties of the intelligence personnel. Every unit in the front line must do its own patrolling and establish its own observation stations, which report direct to the leader of the unit. Important information obtained by any unit should always be transmitted to the next higher unit. However efficient the intelligence personnel, information is never absolutely complete or reliable. There is always need of verification and amplification.

The relative numbers of intelligence or other personnel assigned to patrolling and observation from fixed stations will vary with the situation. Neither method can be said to be better than the other, and both are employed to the fullest extent. In general patrolling will be chiefly employed in close country where observation is difficult, at night, on the march, and in the attack, especially in open warfare. Conversely observation from fixed stations will be chiefly used in open country where observation is easy and patrolling difficult, when the command is stationary, especially on the defensive in stabilized warfare.

Example of the Dispositions of the Intelligence Section in Attack.

The following example will indicate a possible disposition of an intelligence section in an attack.

The battalion intelligence officer is with the battalion commander and in touch with the message center. He has a battle map on which he has recorded and continues to record all important data pertaining to the tactical situation. He has also a note-book containing an index or record of information received. In addition a written and graphic record of information is maintained at the command post. Bn. 2 has with him one or more privates as assistants and messengers.

One sergeant (chief observer) is at the command post of the battalion, with two privates as assistants. He keeps up to date the battle map of Bn. 2, by recording upon it the latest changes and additions according to information received. He has files of all information received and sent, and a chronological outline of all data obtained since the last periodical report of intelligence, and on which the next report will be based. He has a supply of maps of various classes and scales for various purposes, and the necessary drafting and other equipment, stationery, etc., necessary in the performance of his duties.

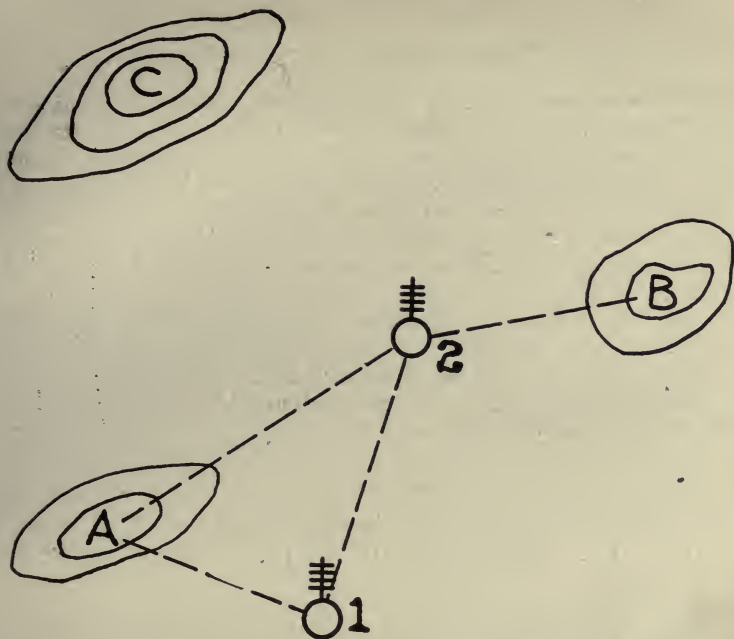


PLATE 24.

An observation post, manned by one corporal and three privates, is located on Hill A (Plate 24). The post is equipped with field glasses, lensatic compass, watch, books of observation post reports and message blanks, maps, and stationery. Communication with the command post is maintained by runner.

With each first line company is an intelligence group of one corporal and three privates, similarly equipped. They remain with the company throughout the attack, or as long as it remains in the front line. Their special function is to keep Bn. 2 advised as to the progress of the attack and the location of the front lines on both sides. They report also any other information of value. They communicate with the battalion command post through the companies to which they are assigned whenever possible, and at other times by a runner from their own personnel.

There are three searching patrols of two men each, who cover the battalion zone of action, immediately in rear of the front line. They search enemy dead or wounded for identifications, maps, documents, etc., and investigate all observation and command posts, shelters or other stations abandoned by the enemy, in search of like information.

As the attack progresses an observation post is established on Hill B (one corporal and three men), whereupon the post at A is vacated, its personnel reporting at the command post, where they are available for new assignments.

The scout sergeant, accompanied by one private, investigates Hill C, with a view to its possible use as an observation post. He having reported it as suitable, an observation group from the command post is sent to the hill as soon as the advance renders this possible.

All members of the intelligence section not assigned to any of the foregoing duties are in reserve at the command post, under the orders of the sergeant. They are available for assignment to patrols or observation posts, and will assist in interviewing prisoners, examining captured material, maps and documents.

Notes.

At this point in the course several periods of instruction may well be devoted to a thorough review of the course in Scouting and Patrolling, especially the practical exercises.

THIRTEENTH LESSON. INTERCOMMUNICATION.

Need for intercommunication. The prompt and reliable transmission of intelligence and orders, and the control and co-ordination of all the details of military operations, both in maneuver and in combat, require an effective system of intercommunication, extending from the highest units to the lowest.

Intercommunication is accordingly a most important part of military training. Every leader should have a thorough practical knowledge of the methods employed within his own unit, and should be familiar with the general subject of intercommunication.

Signal troops are assigned to divisions and larger units. They maintain communication forward to infantry brigade headquarters. All intercommunication within the infantry brigade and its component units is maintained by the infantry.

The artillery will usually have its own systems, the stations or centrals of the artillery being connected with those of the infantry.

Command Posts.

The system of intercommunication in the area occupied by a military force resembles a net. The junction points of the net are the command posts of the various units, and each cord joining two such points represents one, or more usually several different systems of communication between them.

Every tactical unit, however large or small, has a command post located within the area occupied by the unit. In the squad the command post is the person of the squad leader. In larger units the command post includes a considerable personnel and apparatus which may be and usually is housed in one or more suitable shelters.

Each command post is connected by one or more systems of intercommunication with the command posts of its subordinate units in the next lower echelon. Thus the regimental post is connected with the three battalion posts, the battalion post with the posts of its component companies, etc. Each command post is also connected with the posts of its neighboring units, and with those of the auxiliary arms and services operating in conjunction with it.

Axes of intercommunication. It will be evident that the most important avenues of intercommunication are those from front to rear (and vice versa). That is to say, the communications which pass between a battalion commander and his companies are more numerous and more important than those which pass between adjacent battalions in the same echelon.

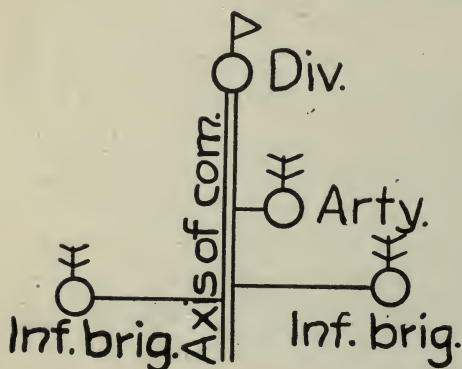


Fig. 1.

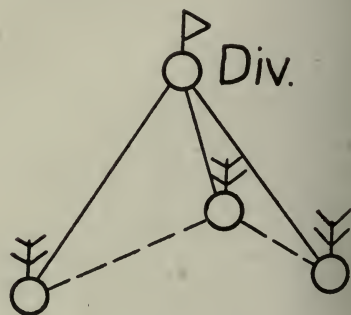


Fig. 2.

In order to simplify the system it is the custom to have certain trunk lines, called axes of communication, from front to rear at intervals. The command posts of the subordinate units are connected laterally to these axes of communication. (Fig. 1, Plate 25.) This system requires fewer lines and is more easily installed, operated, maintained and extended than a system in which an entirely separate line is run from the superior headquarters to each subordinate unit. (Fig. 2, Plate 25.) If Plate 25 represents the telephone communications it will be noted that by means of a switch-board at division headquarters direct telephone connection may be established between any of the subordinate units.

Advance by bounds. In attack, or any operation involving a movement of the forces, the various command posts must move forward in order to be at all times within the areas occupied by their units, as is necessary to the proper exercise of command. In the case of the squad the command post or person of the corporal, is continually moving. In the case of the larger units with their elaborate installations, continual movement is neither necessary nor practicable and these stations "advance by bounds" from time to time. In order to preserve the continuity of intercommunication the advanced station should be selected and occupied, and its communications established before the old station in rear is closed. It will be apparent that the difficulties of intercommunication in the advance will be greatly reduced by the use of trunk lines or axes of communication.

Means of Transmission.

The actual means of transmission employed between the successive echelons of command posts will vary with their distance from the front, the activity of the operations, amount of movement involved and other conditions. Between the headquarters of the larger units in rear, as they are separated by greater distances and change their locations less frequently, the more formal systems involving elaborate installations and permanent stations will be employed. For example, in a highly organized and stabilized sector, telephone communication will always be carried as far forward as the command posts of the front line battalions, and often to the company command posts. In an attack involving a rapid advance it will often be impracticable to maintain continuous telephone communication in advance of regimental headquarters. Temporary lines, laid upon the ground or strung upon trees and fences are carried forward to battalion headquarters whenever practicable. Couriers (horse, motorcycle and bicycle) will be employed to a greater extent than in stabilized situations.

Amongst the small infantry units in contact with the enemy and in the zone of intensive hostile fire, any system involving the use of cumbersome apparatus, exposed lines, and fixed stations is manifestly out of question. Even couriers may be unable to operate. The distances to be covered are relatively small, and the chief reliance for distances exceeding the limits of the spoken word or individual signal, will be runners carrying verbal or written messages.

Every known practicable means of intercommunication has been employed for military purposes. The principal systems that are or have been employed are as follows:

Telephone.

Telegraph.

Wireless telephone.

Wireless telegraph.

Earth telegraph.

Projector lamps.

Heliograph.

Pyrotechnics—flares, lights, bombs, smoke, rockets, etc.

Flags.

Panels. Displayed on the ground as a signal to aeroplane.

Signals by light or streamer and dropped messages from aeroplanes.

Acoustic signals—whistle, bugle, drum, horn, gong, whirligig, etc.

Pigeons and dogs.

Couriers—horse, motorcycle and bicycle.

Runners.

Arm signals.

Spoken word.

Advantages and disadvantages of various means of intercommunication. Each of these methods has its advantages and disadvantages and its special field of usefulness. Some are suitable for long distances, others for short; some for long messages, others for short. Some require cumbersome apparatus and permanent stations, others require no apparatus whatever. Some are highly sensitive and subject to interruption, and hence cannot be employed near the front, subject to hostile fire and damage from other causes; some can be employed in any situation. Some can be employed only by night; others only by day; still others by night or day. Some are of very limited application; for example, horns are usually employed only as gas alarms.

Reliance should never be placed on any one means where it is possible to employ several as insurance against breakdown or interruption.

The most satisfactory and reliable means of intercommunication is generally the spoken word between two individuals in personal contact. It is for this reason that a commander assembles his subordinates to hear his orders whenever such a procedure is practicable. This method has the great advantage that it affords a two-way communication. The best substitute for personal contact is the telephone, which is accordingly regarded as the most satisfactory means for communication over a distance in all situations where it is practicable to use it. The telephone, however, is very sensitive and easily interrupted, so that it is not suitable for use very close to the front.

Intercommunication in the Squad.

The members of the squad communicate with each other, and the leader controls his men by voice and simple visual signals with the arm. Ordinarily the squad leader can see and speak directly to all members of his squad.

Intercommunication in the Section.

The section leader communicates with his squad leaders by voice and visual (arm) signal. The whistle is employed for certain signals. The section guide assists the leader in receiving and transmitting orders and signals. He is especially charged with watching for signals from platoon headquarters and from adjacent units.

The subject of intercommunication in the squad and section is discussed in detail in the course in Musketry.

Intercommunication in the Platoon.

The platoon leader maintains intercommunication with his two section leaders, with company headquarters, and with adjacent units, and in emergency may sometimes communicate directly with the supporting weapons—machine guns, howitzers and one-pounders.

The personnel of platoon headquarters includes the platoon sergeant and four runners. Their chief duty is to assist the platoon leader in maintaining intercommunication.

The usual means employed are verbal orders, arm and whistle signals, and messages (usually verbal) by runner. Other means less frequently employed are pyrotechnics (pistol and rifle lights, flares, bombs, rockets), and flag signals (wig-wag and semaphore).

Intercommunication in the Company.

The company commander maintains communication with his three platoon leaders, with battalion headquarters, with adjacent units, and with the machine guns sup-

porting the company. In emergency he may sometimes communicate directly with the howitzers and one-pounders of the battalion. Ordinarily requests for howitzer or one-pounder fire will be made through battalion headquarters.

Each platoon sends to company headquarters one runner to act as agent of communication. The supporting machine guns send a communication detail of one corporal and two runners. The company has six runners and two buglers who are used as agents and signalmen. During combat two runners are with battalion headquarters and two or with the rear echelon.

The 1st sergeant accompanies the commander and takes charge of this communications personnel. He is also the message center of the company.

The usual means of transmission of orders and messages by the company commander are verbally by word of mouth, written or verbal messages by runner, arm, whistle and bugle signals (bugle calls are not used in combat), projector lamps, pyrotechnics and flag signals.

The subject of intercommunication in the platoon and company is discussed in detail in the following lessons of this course.

INTERCOMMUNICATION IN THE BATTALION.

The headquarters company of each infantry battalion includes a communications platoon, commanded by a lieutenant who is designated as the battalion communications officer. He operates under the immediate orders of the battalion commander or executive officer (Bn. 3).

With this personnel the battalion maintains intercommunication between battalion headquarters and all the component units of the battalion, with adjacent units, with the supporting artillery (accompanying guns), and with regimental headquarters.

The communications platoon is organized into six sections, each of which is charged with a function of intercommunication. (See Plate 26.) These sections are as follows:

Headquarters section. Command and co-ordination.

Message center section. Establishes and operates the battalion message center.

Courier section. Includes horse, motorcycle and bicycle couriers and runners.

Radio and panel section. Operates the wireless telegraph and ground panels for communication with aeroplane.

Wire section. Establishes and operates all systems of wire communication.

Visual section. Operates all systems of visual signaling—flag, pyrotechnics, projector lamps.

The organization of these various sections is shown in Plate 26.

Message Centers.

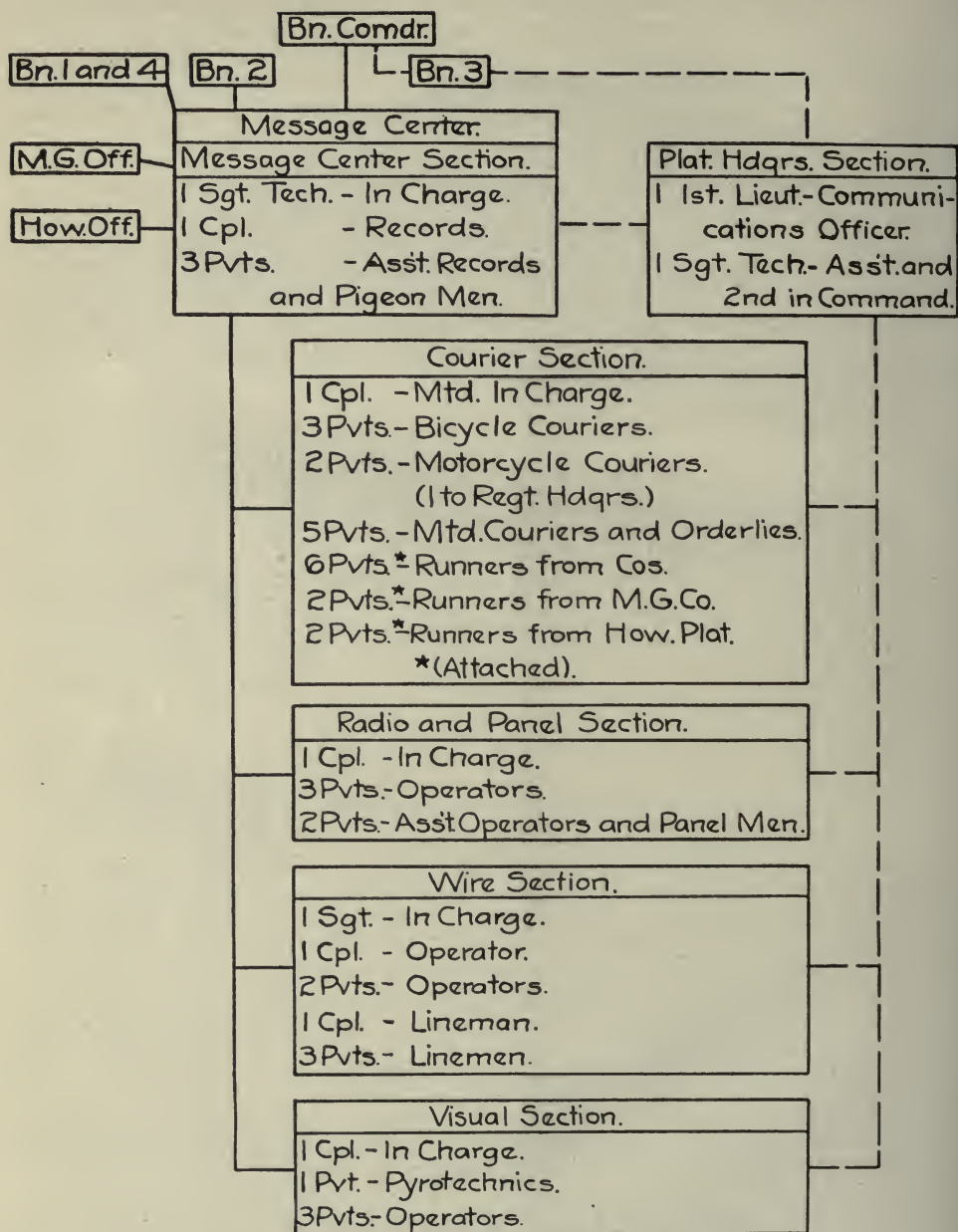
In order to systematize the receipt and delivery of messages, orders and other official communications, a message center is established at or in immediate communication with each command post.

A message center is a clearing house for all communications received and sent. All such communications pass through the message center, where they are classified, recorded and dispatched or distributed to the persons or organizations for whom they are intended.

The message center of a squad is the squad leader; of a company, the 1st sergeant. The message centers of larger units include a sufficient personnel, with their equipment, all of which may be housed in a suitable shelter.

The message center serves all elements of the command post at which it is established, and operates continuously, day and night. It records the times of receipt and dispatch of all messages, and verifies their delivery. It controls all available means of intercommunication, regulating their employment. It classifies outgoing messages and dispatches them in the order and by the means which their relative importance or urgency demands.

The message center should when practicable, be centrally located with reference to the agencies of the command post which it serves, and the means of intercom-



Legend: Full Lines - Channels of Messages.
 Broken Lines - Tactical and Technical Control.

PLATE 26.—Organization of Battalion Communications.

munication which it employs. In each message center there should be a chart showing the various means of communication with subordinate, adjacent and higher units, and the locations of the command posts of such units.

The message center is under the command of the communications officer of the unit, who is responsible for its efficient operation.

The rule that all communications must pass through the message center has the following manifest advantages:

a. It relieves the command and staff of all responsibility for the transmission of messages.

b. It insures the dispatch of all messages at the proper time and by the proper means, according to their nature, importance and urgency.

c. It prevents unimportant messages taking precedence over and delaying the transmission of more important matter.

d. It insures a proper use of the available means of communication, preventing the overload and breakdown of one system while another is not being used to good advantage.

e. It provides always for reserve and emergency means of communication.

In short a message center provides for the systematic dispatch of information, and for effective and economical use of available means of communication.

The organization of a battalion message center is shown in Plate 26.

Couriers.

The corporal in charge of the courier section of the communications platoon is under the orders of the chief of the message center. He gives orders for the dispatch of all couriers, and keeps a roster of their trips.

He will see that all his couriers know:

1. All battalion and regimental staff officers and subordinate commanders, by sight.

2. The location (office and quarters) of each battalion and regimental staff officer.

3. The location of the command posts of the regiment, all subordinate units of the battalion, and adjacent battalions, and the routes thereto.

He is responsible for the performance of duty by the couriers, and for the care and maintenance of all equipment. He reports to the message center the delivery of all messages.

Couriers are the most important means of intercommunication in the battalion and lower units. Mounted or cycle couriers are used as far forward as practicable. In the area of intensive hostile fire runners (on foot) are employed.

When it is necessary to transmit messages a considerable distance by runner, relays of 150 to 300 yards may be used. These relays are established by the higher units, forward to lower units.

Very important messages should be sent through areas exposed to hostile fire in duplicate by two runners separated by a distance of at least 40 yards.

Couriers and runners should be selected men, young, of good physique and intelligence, with alert and retentive minds. They should be thoroughly trained for the performance of their important duties. They should be able to read a map, use a compass, and accurately transmit a verbal message. They should be skilled in individual movement and the use of cover. (See Scouting and Patrolling.)

Couriers often travel parallel to telephone and telegraph lines. They should discover breaks in such lines and repair them when possible, for which purpose they are equipped with pliers and tape, and instructed in the methods of making wire splices.

Radio (Wireless) Telegraph.

Radio telegraphy and telephony are of special value for military purposes, especially in forward areas, for the reasons that no wire lines are required, and the small portable outfits are very easily transported and quickly set up.

Radio methods are particularly applicable to communication between battalion and regimental headquarters, and for use by aeroplanes. They are also used at sea and across water. They have the disadvantages that they are far less reliable than wire systems and that messages are frequently picked up by the enemy.

Panels.

Panels are used for communication from the ground to aeroplane.

Identification panels of distinctive shapes and colors are used to indicate the location of various headquarters (command posts), landing fields, dropping places for messages, and other localities of special interest to the aviators.

Signaling panels are used to transmit simple messages by a pre-arranged code—which should be changed from time to time.

Marking panels are occasionally employed to indicate the position of the front line. They are not very reliable for this purpose.

Wire Systems.

Wire systems include the telephone, several forms of telegraph, the buzzer-phone, and any other system in which wire is used for transmission. In general the types of instrument employed are similar to those used in commercial life.

Wire systems are the most reliable means for mechanical transmission of messages, the telephone being by far the most important means of intercommunication employed, except at the immediate front in actual contact with the enemy.

All wire systems have the weakness that their lines are subject to being cut by fire, and accordingly the nearer the front they are employed the greater the difficulty of maintaining them.

The usefulness of the telegraph for short distances is not sufficient to warrant the difficulty of maintenance in the area subject to shell fire and it is accordingly seldom used forward of division headquarters. It has the further disadvantage that it requires highly trained operators. For the larger units and longer distances in rear of the battle area it is very commonly employed. It is most suitable for the transmission of short messages, long dispatches and reports being sent by motorcycle couriers.

The telephone is the best substitute for personal contact, and its usefulness is so great that it is employed as far to the front as possible, in spite of the difficulties of maintenance. In the case of trunk lines in the advanced areas these difficulties may be greatly reduced by carrying the wires in lead covered cables, buried to a depth of 6 to 8 feet or more. Even a shallow open trench will afford telephone lines considerable immunity from hostile fire, as it protects them from flying shell fragments or splinters, and they can be ruptured only by a direct hit.

Temporary telephone lines can be laid very rapidly, light wires being run along the ground or strung to the trees and fences. Telephone communication is thus able to keep pace with a forward movement of troops. The hasty lines are of course very vulnerable to interruption and if the communication is to be maintained they should be better protected, or replaced by more permanent installation.

In rear areas, where telegraph and telephone lines may be strung on the standard poles and cross arms and are immune from shell fire, interruptions will be few.

Back of division headquarters wire systems are used almost exclusively, and the large telephone exchanges are permanently installed in suitable buildings.

The buzzer-phone is a telegraph instrument in which the ordinary commercial key is replaced by a buzzer, which may be provided with a microphone and an emergency telephone attachment.

Visual Signaling.

Visual signals include all those which are received by eye. The more important are:

Arm signals.

Flag signals (wig-wag and semaphore).

Projector lamps.

Pyrotechnics.

The use of arm signals is discussed in detail in this and other courses. (See Musketry, I. D. R., etc.)

Flag signals. The flag was formerly very commonly employed in military operations. It has now been largely superseded by more satisfactory means of intercommunication. It requires skilled operators, and even in this case is unreliable. It can seldom be used for messages from rear to front, except when not in the presence of the enemy.

There will be situations, however, in which the flag will be the only available means of communication, and accordingly all units down to include the platoon, are equipped with flag kits and should have a number of men instructed in their use. The flag is to be regarded as an emergency means of communication to be employed when other means are interrupted or inapplicable.

The unreliability of flag signaling increases with the range. Under favorable conditions flags may be employed up to 1000 yards, and this may be increased if field glasses are used to receive the messages. Semaphore signaling, in which two small flags are employed, is more rapid than wig-wag, but has less range.

Up to about 750 yards wig-wag may be sent at a rate of 5 words per minute, and semaphore at a rate of 10 words per minute.

Projector lamps. These are a development of the World War. They are a substitute for and operate in a similar manner to the old heliograph. The rays of the lamp are projected in a narrow beam, which increases their range, and reduces the danger of the message being picked up by the enemy. The beam should be accurately directed on the receiving station.

Lamps can usually be employed only for signals from front to rear. They are especially applicable to the conditions of stabilized warfare. Their range is limited, but the apparatus is readily transported, and may be used by units as small as a company.

Pyrotechnics.

Pyrotechnics include pistol and rifle lights and flares of various colors, bombs, rockets, colored smoke, etc. They may be used by night or day.

Pyrotechnic signals are sent only from front to rear, usually by the front line troops to their supporting artillery, or the command posts of the next echelon in rear. They are also employed for signals between aeroplanes and the ground.

Pyrotechnic signals are decidedly limited in their use. They have the following disadvantages:

1. If set off on the ground their range is very limited. If thrown high in the air they may be seen at a considerable distance, but in such a case there is difficulty in making certain of the source of the signals and the locality from which they come.

2. Pyrotechnic signals may betray the presence and location of troops to the enemy.

3. They are usually readily picked up by the enemy, and it is therefore necessary to change the code occasionally, thus involving a risk that signals may be misunderstood.

4. The signals may be simulated by the enemy. Even if he does not know the code he can produce great confusion.

5. There is always danger that the signals may not be received, as it is usually impossible for the sender to verify the fact of receipt.

6. There is great danger of confusion as to the meaning of pyrotechnic signals, as they may be sent up by the enemy or by unauthorized persons.

7. For use in the front lines the problems of transportation and deterioration are difficult.

In spite of these many and serious disadvantages, however, pyrotechnic signals are extremely useful when employed for the purposes to which they are especially applicable.

Their principal use is to convey signals from the front line units to their supporting artillery. They are also used as a signal for the launching of an attack or beginning or ending of other operations; to indicate the occurrence of some important event, as the capture of an objective or arrival in a certain locality; to indicate the positions of front line units in important cases, etc.

Because of the danger of confusion resulting from the use of pyrotechnic signals, the following precautions should be observed:

1. They should be used only for a very few signals of a very simple nature. Any attempt to convey long messages or detailed information by pyrotechnics will produce only confusion.
2. They should be employed in accordance with a simple pre-arranged code, well known throughout the army.
3. At posts where pyrotechnic signals may be received there should be lookouts constantly on the watch for signals from the front.
4. Pyrotechnic signals should be sent only by responsible persons, and the material should not be allowed to fall into the possession of anyone else.

Pigeons.

Carrier pigeons are one of the most reliable means of communication. Pigeons will travel through storm, fog, shell-fire, at an average rate of about 60 miles per hour, and will deliver their messages in over 97 per cent of all cases. For military purposes their range is practically unlimited.

Pigeon messages can, of course, be sent only from front to rear. The bird proceeds direct to his cote, carrying the message in a small cylinder attached to his leg. The cote is connected to division headquarters by telephone and courier.

Each battalion message center carries a number of pigeons, who are cared for by their enlisted personnel.

FOURTEENTH LESSON.

THE INFANTRY RIFLE COMPANY.

Introductory Remarks.

The platoon is an integral part of the company. To properly lead a platoon a junior officer must have a definite knowledge of the functions of the company.

Every infantry leader should be a potential replacement of at least the next higher commander. Accordingly, a proper course of instruction for platoon leaders will give them definite ideas of the problems that confront the company commander, the principles he applies to the solution of these problems, and the exact duties he has to perform.

The company is the smallest infantry unit which is capable of sustained action, and which includes within itself the means of making good its own losses in combat.

There are six kinds of infantry companies, to-wit: (a) Rifle, (b) machine gun, (c) howitzer, (d) headquarters, (e) administration, and (f) tank companies. This lesson deals with the rifle company only. Details of the organization of the infantry companies are given in the tables in the Appendix.

Organization.

The infantry rifle company consists of company headquarters and three rifle platoons, designated as 1st, 2nd and 3rd.

Each rifle platoon consists of a platoon leader (1st or 2nd lieutenant) and 57 men. The details of its organization are given elsewhere. It is organized primarily for the purposes of combat.

Company headquarters includes 1 captain (company commander), 1 1st lieutenant (2nd in command), and 23 men.

The 1st lieutenant with company headquarters fulfills the functions of (a) assistant to the company commander, and (b) replacement for the company commander. He should therefore be an officer of the same training and ability as the company commander. The nature of his duties as assistant to the company commander are discussed elsewhere.

The enlisted personnel of company headquarters includes: 1 1st sergeant, 1 mess sergeant, 1 signal sergeant, 1 supply sergeant, 1 corporal clerk, 1 signal corporal, 1 barber, 1 tailor, 1 cobbler (shoemaker), 2 buglers, 2 cooks, 2 assistant cooks, 2 mechanics, and 6 runners or agents of communication. These agents are used to maintain communication with machine gun and howitzer units, battalion headquarters and adjacent organizations.

It will be noted that the entire personnel of the company headquarters is concerned with the duties of: (a) Administration, (b) supply, and (c) intercommunication. They constitute the staff of the company commander, and are used by him in performing the three duties mentioned, in connection with the operations of the rifle platoons. How these duties are performed will be indicated in the proper places.

The Company Commander.

The rifle company is commanded by a captain, who is directly responsible for the discipline, training and administration of the company, and its correct employment in battle. The administration of the company includes such details as quarters, rations, equipment, pay, medical attendance, reports of personnel, etc.

The company commander in attack deals with five elements: (1) Man power, (2) fire power, (3) terrain, (4) time, and (5) supply. The man power consists of his three rifle platoons. The fire power includes: That which he directly controls, to-wit, rifle, automatic rifle and grenade fire; and that which he obtains through battalion (or higher) commander, to-wit, machine gun, light mortar, one-pounder and artillery fire. Terrain and time are elements which guide his conduct, and change with each situation. The supplies with which he is chiefly concerned, in the order of their importance, are: (1) Ammunition, (2) water, and (3) food.

Phases of the Attack.

The attack of the rifle company naturally divides into 3 phases:

1. The approach march.
2. The entry into the fire fight.
3. The fire fight. (Conduct of the attack.)

The problems which confront the company commander in each of these phases, the principles which guide him in their solution, and the actual duties which he performs, will be discussed and illustrated.

THE APPROACH MARCH.

Approach March of the Battalion.

The battalion advances to the attack, within its zone of action, in column of route until such time as the situation requires an extension. Such situation might be entry into a zone of hostile artillery fire, or one in which there was a probability of encountering such fire; or into a zone in which the enemy's outguards or advanced troops are encountered in such strength as to indicate that the necessity for battle deployment is imminent. The term column of route ordinarily means that the companies of the battalion march in column of squads, one in rear of another.

Prior to extension the approach march is conducted by the battalion commander. He selects the route within his zone of action, which affords the best concealment, combined with ease of movement. Ease of movement ordinarily requires the use of the roads. The necessity for concealment may forbid their use. When practicable the route of advance should be within the zone of action of the leading company, which allows the battalion to be extended on this company. The battalion com-

mander sends out the necessary covering detachments (advance and flank guards) and provides for necessary reconnaissance. He regulates the rate and direction of march.

During this state of the approach the company commanders observe the terrain with a view to properly conducting the movement of their companies when the battalion is extended. To perform this duty, and in order to be near the battalion commander and promptly receive his orders, it is usually desirable that the company commander be with the battalion commander at the head of the column.

The attack orders of the battalion commander may be given:

a. Before the battalion enters its zone of action. In such case very definite advance information will be necessary, and the orders must be issued from a map.

b. Just before the extension of the battalion from its column of route. In this case certain localities and features may be pointed out on the terrain as well as on the map.

c. When the battalion has reached the most advanced locality in which it can complete its deployment for battle and enter the zone of effective small arms fire.

The latter procedure is preferable, and will be the usual case.

Where the nature of the ultimate deployment of the battalion can be foreseen, for example, where the battalion zone of action is such that the battalion commander can decide on the number of companies to be placed in the assault echelon, the battalion may be extended with the companies in their proper relative positions. Each reserve company follows an assault company at the proper distance. This will facilitate the subsequent deployment for battle.

When the situation is obscure, when the battalion has as yet no definite zone of action, and when the time, place and direction of the ultimate deployment are uncertain, the battalion commander may extend the battalion with the companies in column at increased distances, or in echeloned column. This provides for security against artillery fire, protects the flanks, and facilitates deployment in any direction.

Before the battalion is extended from its route formation and separated from its trains, the battalion commander will cause the necessary supplies of ammunition and food to be issued to the companies. Through his staff officer (Bn. 1 and 4) he provides for the subsequent location and movement of the trains.

The rear echelons of all the companies of the battalion, consisting of the 2nd in command, all of the headquarters platoon except such individuals as remain with the company commander, the company kitchens, and combat trains, are usually consolidated under charge of a battalion staff officer (Bn. 1 and 4). They move or take position as the battalion commander directs. Necessary supplies are delivered to them by the regimental supply officer (R4) who draws these supplies direct from the division trains (or supply dump, in stabilized position).

When the battalion extends, the battalion commander will assign to each company a zone of action and a direction of advance. In order to maintain the proper direction and regulate the rate of advance, he will designate a base company. The battalion commander will regulate the movement of the base company (he will usually be with it), and the other companies conform to the movement of the base company.

APPROACH MARCH OF THE COMPANY.

When the battalion extends from route column each company commander, of an assault or reserve company, will be confronted with the duty of conducting the approach march of his company. As a rule the considerations which dictated an extension of the battalion by company will also dictate an extension of the companies by platoon, as soon as or shortly after they have left the battalion column of route.

The mission of the rifle company commander at this phase of the combat, is to bring an organized and controlled unit, intact, at the proper time to the exact place where it is to enter the fire fight.

Problems of the Company Commander.

The problems which the rifle company commander will ordinarily be called upon to solve during the approach march, are as follows:

- 1st. To maintain the proper direction of advance.
- 2nd. To regulate the rate of advance.
- 3rd. To maintain necessary contact and intercommunication during the advance.
- 4th. To provide for reconnaissance of the terrain traversed.
- 5th. To provide for the security of the company during the advance.
- 6th. To make necessary provisions for the supply of the company.

Maintaining the direction of advance. The company commander maintains the *direction of advance* of his company by designating a base platoon and a direction of march and assigning to each platoon a zone of action. He regulates the march of his base platoon, requiring it to maintain the proper direction of advance, and its proper position with reference to the base company. He causes the other platoons to maintain their proper positions with reference to the base platoon. He insures that each platoon, in this initial deployment, has the correct interval and distance from the base platoon, and during the march he constantly checks the positions of the platoons to see that these intervals and distances are being maintained.

In case the base company changes its direction of march the other companies conform to this change. Ordinarily notice of a change of direction will be sent by the battalion commander to each of the companies.

The zones of action assigned to each assault company and each assault platoon should, when practicable, be approximately those in which they will subsequently deploy for the attack.

Regulating the rate of the advance. The company commander regulates the *rate of advance* of his company by causing his base platoon to conform to the rate of the base company, and by seeing that the other platoons preserve their proper distances and intervals from the base platoon.

When the company is extended the company commander supervises the movement of his platoons. In the case where the company is united in a single column of route, he conducts the advance by bounds as hereinafter described under the platoon in the approach march.

Contact during the advance must be maintained: a. Within the company, that is, between the headquarters of the company and the headquarters of each platoon, between adjacent platoons, and between company headquarters and the rear echelon of the company.

b. Between company and battalion headquarters.

c. With adjacent units on the flanks and in rear.

These contacts are established and maintained as follows:

a. The company commander will take a position from which he will be able to see all of his platoons, except in very close or diversified country. Each platoon sends a runner to company headquarters. Each of these runners watches his own platoon, and is used by the company commander to send messages to the platoon. It is the duty of each platoon leader to maintain contact with adjacent platoons. The company commander sends two of his runners to his rear echelon. These runners may be used to carry messages from the rear echelon to company headquarters. The company commander ordinarily communicates with his rear echelon through battalion headquarters.

b. The company commander will frequently be able to see the battalion commander. He sends to battalion headquarters two runners, who are used by the latter to send messages to this company. The company commander may employ the two runners remaining with him to communicate with battalion headquarters.

c. The company commander will often be able to see the units on his flanks. In any event he causes his buglers to observe the units on the flanks, and to the rear, keeping him informed as to their positions and progress. In addition to this, especially in wooded or diversified country, or when there is a considerable interval

between companies and battalions, it may be necessary to send out patrols of two to four men from the support platoon to operate in the intervals on the flanks and maintain visual contact with adjacent units. In such case the buglers with the company commander observe these contact groups.

The machine gun platoon supporting the company (if there be such) sends to the company headquarters a reconnaissance corporal and two runners to be used by the rifle company for communication with the machine guns.

The 1st sergeant accompanies the commander, takes charge of these various observers and agents, and acts as message center of the company.

Reconnaissance. The company commander moves forward from one favorable observation point to another, and with the aid of his glasses makes constant personal reconnaissance to his front and flanks. The personnel with him include two of his six runners, two buglers, and a runner from each platoon, as well as such agents of communication as may have been sent to him by machine gun or support companies. The reconnaissance corporal of the supporting machine guns makes systematic reconnaissance to the front, especially with a view to the possible employment of the machine guns.

Patrols from the support platoon and the company buglers reconnoiter to the flanks. Each assault platoon reconnoiters its own front, and keeps the company commander advised as to any developments which might influence his actions.

Security. Proper formations, contact and intercommunication and continued reconnaissance by the company commander and his subordinate leaders are the chief provisions for the security of the company during the approach march.

Ordinarily the company commander will dispose his platoons in echelons corresponding to those in which they will enter the combat. Thus two platoons might be assigned to the assault and one to the support echelon, one to the assault and two to the support echelon, or exceptionally all to the assault echelon. In this formation an artillery shell cannot hit more than one platoon. In addition the platoons may further deploy in lines of squad columns, thus further localizing and limiting the effects of hostile artillery fire. This extended formation also allows the platoons to select covered routes of approach and to avoid danger areas, or localities where progress would be unduly delayed, such as gassed woods, localities under fire, swamps, thickets, etc.

Supply. The company commander provides for the supply of his company during the approach march, and especially during combat, by assigning the lieutenant of the company headquarters (2nd in command in the company) and the majority of the enlisted personnel of headquarters to the rear echelon (kitchen and trains) of the company. This enlisted personnel includes:

- 1 corporal clerk, who has charge of all reports, records, correspondence and other administrative functions of the company in the field.
- 1 supply sergeant, who is responsible for the equipment and ammunition supply of the company.
- 1 mess sergeant, 2 cooks and 2 assistant cooks, who are responsible for the food and water supply of the company, and for the preparation of cooked meals.
- 3 privates (one from each platoon—company barbers and tailors), 2 mechanics and 2 runners, who are employed by the officer in charge of the rear echelon of the company as he sees fit.

The officer in charge of the rear echelon is responsible for the procurement of the necessary supplies, for the preparation of meals, and for the transportation of ammunition, water and food, as well as other necessary supplies, to the leading echelon.

ENTRY INTO THE FIRE FIGHT.

Orders of the battalion commander. When the battalion reaches the last available covered position before entering the zone of effective small arms fire, or as it approaches a line of departure from which higher authority has ordered the attack to be launched, the battalion commander will usually halt his battalion, assemble

his staff and company commanders and issue an attack order which completes the deployment of the battalion and launches it into the fire fight.

The battalion commander's attack order will usually be issued verbally, and will include:

1. All necessary available information of the enemy and friendly troops.
2. *a.* The general plan of attack.
b. The combat mission of the battalion—in some cases a distant objective.
c. Time of attack.
d. Direction of attack.
e. Line of departure.
f. Limits of battalion zone of action.
3. *a.* Definite combat missions (or objectives) to each company of the battalion, and to attached units.
b. Zone of action of each assault company, and any necessary instructions as to deployment.
c. Initial location of accompanying guns, 1-pounders and light mortars, machine guns, and their missions.
d. Initial location of supports.
4. Administrative instructions:
a. Initial location of battalion aid station.
b. Initial location and dispositions of rear echelon (company kitchens, part of combat and field trains).
c. Initial location of ammunition wagons.
d. Instructions as to evacuation of prisoners.
5. Intercommunication:
a. Any necessary details of the plan of communications of higher units.
b. Locations of battalion command post and message center.

Plate 27 indicates typical dispositions of a front line battalion deployed for attack.

The commander of the infantry rifle company takes notes as the battalion commander issues his attack order. Usually he will be quite familiar with the general situation, from previous orders and the intelligence bulletins that he has seen. He should also be familiar with the special situation confronting the battalion and, in a general way, with the plans of the battalion commander. He makes notes of any information that is new, and especially of instructions pertaining to his own unit and the troops that will support it in the attack. He identifies on his map and on the ground when possible, the localities referred to by the battalion commander, and at the conclusion of the order asks questions on any matters that are not completely understood.

Problems of the Company Commander.

The mission of the company commander in this phase of the combat is to commit his company to the attack in such manner as to insure the greatest probability of success.

The orders of the battalion commander will give him certain information concerning the enemy and supporting troops, and will impose certain limitations as to time and space for his guidance. They may also, in exceptional cases, include certain instructions as to his initial dispositions.

In the achievement of his mission the company commander will now be confronted with certain definite problems, as follows:

1. The initial deployment of the company. This will usually be limited to deciding the platoons to constitute the assault and support echelons, and the positions of the support. Sometimes the company commander may give certain instructions as to how the platoons shall deploy. Usually this is left to the platoon leaders.
2. Definite missions for each platoon—the tasks they are to accomplish.
3. The position from which the attack is to be launched. This may be included in the battalion order. If not, the company commander must decide. In cases where the situation as to the enemy is uncertain, the locality at which the attack will open may be determined by the action of the enemy.

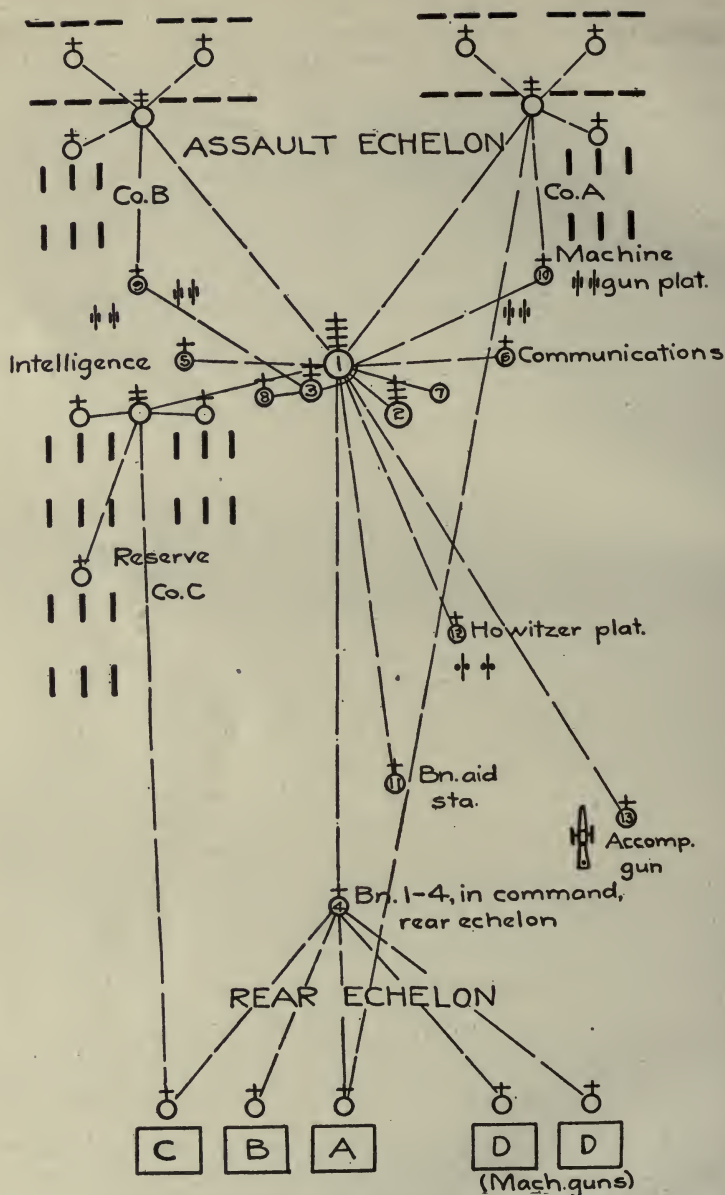


PLATE 27.—Infantry Battalion Deployed for Attack.

1. Battalion commander.
2. Bn. 3. Second in command and executive officer.
3. Commanding officer, Co. D (machine gun company).
4. Bn. 1 and 4. Battalion administration and supply officer. (Rear echelon.)
5. Bn. 2. Battalion intelligence officer.
6. Battalion communications officer.
7. Battalion gas personnel.
8. Reconnaissance officer, machine gun company.
- 9, 10. Platoon leaders, machine gun company.
11. Battalion medical personnel.
12. Attached platoon from regimental howitzer company.
13. Accompanying gun (3-inch field piece attached, from divisional artillery).

4. The time at which the attack is to be launched. This will be subject to the same considerations as the foregoing.

The company commander's solution of the problems that confront him constitutes his plan of action. This plan is the result of a careful estimate of the situation, and is the basis for the attack orders which he issues to his subordinates to carry out this plan.

Estimate of the Situation.

The logical process of thought which is called an "estimate of the situation" has been heretofore explained. In this case it includes:

1. *The mission* of the company. Exactly what is it required to do? Usually this mission will be quite plainly set forth in the orders of the company commander's superior.

2. *The enemy*. What does the company commander know of the enemy, not only from the battalion commander's orders, but from all other sources of information open to him? His probable position at the present time in the zone of action of the company; the extent to which this position has been organized; the enemy's probable intentions, whether to strongly resist or merely delay the attack; his weapons, including artillery support.

3. *His own troops*. Those with which he is chiefly concerned will have been mentioned, and their duties prescribed in the battalion commander's orders. First amongst these is his own command. His man power and fire power is furnished by his three rifle platoons. He should be intimately familiar with their powers and limitations. He should know, for example, that ordinarily a platoon cannot attack on a front of 500 yards with any prospect of success. If the company commander should assign such an impossible task to one of his platoons, he alone would be responsible for its failure. Next he must consider the troops that will support him, with either man or fire power. These also will be given in the orders he has received. He should know what accompanying weapons he may count upon, their powers and limitations, the targets that they can successfully attack, how long it will take to obtain their assistance, and how best to profit by it.

4. *The terrain*. An experienced leader should be very familiar with the influence of the terrain upon attack and defense. From his map, and by personal observation, he should study the terrain to which his actions have been limited by his orders. The principal elements of the terrain, from a military point of view, are the cover that it affords to the attack and to the defense, and the obstacles to movement which it presents. The leader must plan to avail himself of the advantages and evade the disadvantages.

5. *Other conditions*. While the terrain will usually be the most important consideration, any other conditions which actually affect the problem should be duly considered. These will include weather and season, the physical and moral condition of the troops, the state of training of officers and men.

From a consideration of *what he has to do*, what there is to assist him in doing it, and what there is to interfere, the company commander has a basis for deciding *how he is to do it*. This is his plan of action.

There may be several possible courses open. If so he must weigh the advantages and disadvantages of each, and select the one most promising of success. Ordinarily this will be the simplest and most direct. Experience proves that simplicity is one of the fundamentals of a successful plan of action.

Orders of the Company Commander.

Having decided upon his plan the company commander must issue to his subordinates the orders necessary to carry out his plan. These orders should be unmistakable and as brief as clearness permits. They are usually issued verbally to

his assembled platoon leaders, and their platoon sergeants. The initial attack orders of the company include:

1. All necessary information concerning the enemy and own troops.
2. *a.* The general plan of attack.
- b.* The definite plan of the company.
 1. Mission—a given task or an objective to be reached.
 2. Time of attack.
 3. Direction of attack.
 4. Line of departure.
- c.* Plan of employment of the accompanying weapons.
3. Definite combat missions for each platoon.
 - a.* Zone of action of assault platoons.
 - b.* Initial location of support platoons.
4. Necessary administrative details, usually limited to:
 - a.* Location of battalion aid station.
 - b.* Instructions as to the evacuation of prisoners.
5. Initial location (and movements, if practicable) of the company command post and message center. (These will be the same.)

Notes.

Practical Exercise 1, offensive combat, should be taken in connection with this lesson.

FIFTEENTH LESSON. CONDUCT OF THE ATTACK.

Problems of the Company Commander.

Having committed his unit to the attack the duty of the rifle company commander is to supervise and co-ordinate the action of his three platoons, and to assist and protect his assault echelon by the proper use of his supports, and by timely requests for the fire support of accompanying weapons.

The problems which will confront the company commander in carrying out his attack mission will include:

1. Reconnaissance.
2. Intercommunication and transmission of orders.
3. Supervising the conduct of his assault platoons.
4. Control, direction and timely employment of his supports.
5. Determining when and where fire support of accompanying weapons is required, requesting such support, furnishing the information necessary to properly apply it, and seeing that advantage is taken of the assistance given.
6. Security, especially of the flanks of the assault echelon.
7. Supply, especially of ammunition.
8. Evacuation of wounded and prisoners.
9. Being on the alert to assist neighboring units.
10. Keeping his next superior advised of the situation within his zone of action.

Reconnaissance. The basis for the proper performance of his duties by the company commander is continual personal reconnaissance. He must know at all times how his assault echelon is progressing, what the enemy is doing, both in his own zone of action and to the flanks, the situation of the units on his flanks, where his supports are and how he can reach them, the location of the battalion headquarters, etc. Only when thus fully informed as to the situation by personal observation, is he prepared to meet the emergencies that will arise, by formulating intelligent plans of action.

Intercommunication. Contact within the company, with the units on his flanks, and with the battalion headquarters is essential to control, co-ordination and security. In his reconnaissance and the maintenance of intercommunication, the

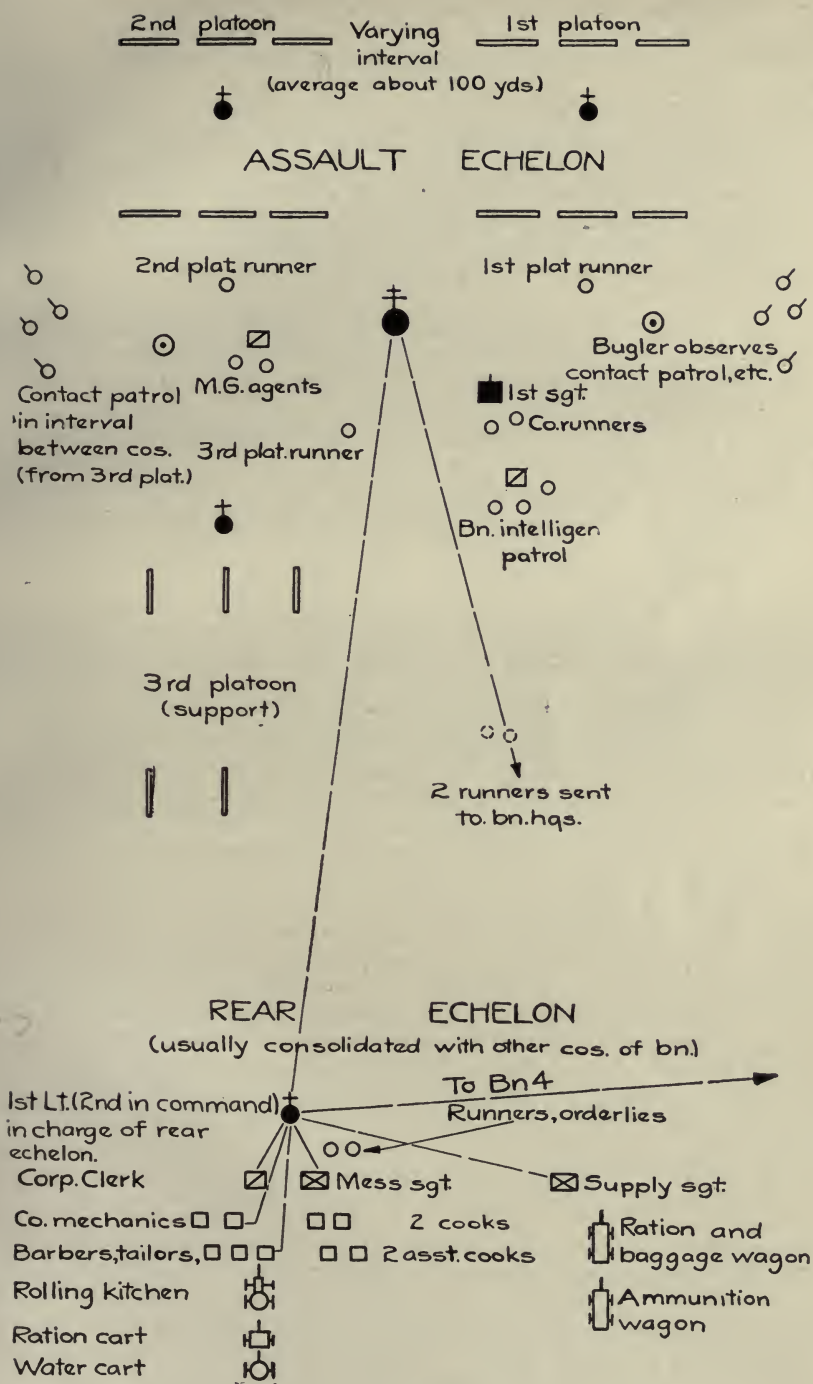


PLATE 28.—Rifle Company Deployed for Attack.

company commander is assisted by his headquarters, runners, observers, agents, patrols.

The 1st sergeant and company runners should constantly observe, or know the location of battalion headquarters. The runners are used to communicate with the battalion.

The corporal agent of the machine guns (when assigned to support the company) and his two runners (agents), assist in observing the enemy, especially with a view to locating favorable targets for machine gun fire, or opportunity for its employment. They must observe or know the location of their machine gun platoon. The runners are used to communicate with the machine guns.

The buglers of the company, as a matter of routine, observe the units on the flanks.

The runners from the platoons should constantly observe or know the location of their own platoons, and are used to communicate with their platoons.

All these observers and agents should be within sight of the company commander or in easy and direct communication with him.

When these provisions are insufficient for satisfactory observation and contact, the scouts of support platoons may be utilized as observers. Small patrols of four men to a squad, from the support echelon, may be sent to the flanks to establish contact with adjacent units and provide for security. In case the distances are great, contact with these patrols is maintained by means of runners (exceptionally by visual signals), the patrols being made strong enough to furnish them.

Transmission of orders. In the situation of the company in battle, emergencies arise very suddenly. They must be met by prompt action. The company commander must be able, often in a few seconds, to decide upon a proper course of action, and formulate correct plans. As he is seldom in actual personal contact with his principal subordinates, the platoon leaders, his plans must be transmitted to them in the form of orders. And these orders must be transmitted directly, surely, and without delay.

In certain cases the company commander may be able to issue orders for his support platoon direct to the platoon leader.

In the majority of cases, however, orders to the platoons during the fire fight must be transmitted. By runner will be the usual means of transmission, and the order will generally be verbal. Because of the difficulty of transmission these orders must be brief, simple and direct. A runner cannot be expected to carry a complicated order, and such orders moreover, are not to be encouraged. Plans for the employment of a company in battle must be simple if they are to be successful, and a simple plan can be conveyed in a few words. For example, "To Lieut. A: Halt when you reach the edge of the woods."

To insure reliable transmission of orders the company runners must be trained to carry simple messages. And they must be skilled in picking covered routes from the company command post to the platoons. (See Scouting and Patrolling.)

When in exceptional cases a brief order containing one idea is not sufficient to meet the situation, the company commander may go in person to the platoon leader and explain the situation, or he may send a written message.

Supervising the conduct of the assault platoons. Orders to the assault platoons, once they have been committed to the fire fight, may be required:

1. To co-ordinate the movements of the platoons.
2. To rectify wrong directions of attack or other manifest errors.
3. To cause the platoon leaders to use their support sections if they have failed to appreciate a necessity or opportunity for such use.
4. To take prompt advantage of the fire assistance of accompanying weapons, or of other units.
5. As to procedure following reorganization after an assault—(to continue advance, hold position, become company supports, etc.).
6. To suspend or resume the attack, etc.

For example, the company commander notes that his 1st platoon is not making satisfactory progress. He studies the situation and sees that the platoon leader is employing only one section, which is held up by frontal fire. On the right of the platoon is an interval including a wooded draw affording fairly good cover for a maneuver against the left flank of the enemy's position. The platoon leader is not employing his troops to best advantage. The company commander calls the runner of the 1st platoon to him and orders, "To Lieut. A: Attack left of enemy at farm with support section. Mortar fire requested." No details as to procedure are given. The order reminds the platoon leader that the company commander is watching him. It calls his attention to a neglected opportunity and points out what the opportunity is. It informs him that he may look for fire support from the accompanying weapons.

The important duties of maintaining direction, locating targets, properly applying fire, co-ordinating fire and movement, and other duties pertaining to fire control and the maintenance of fire discipline, are not the immediate responsibilities of the company commander. He constantly observes the conduct of his subordinates during the progress of the attack, and intervenes when they are not performing their duties to his satisfaction. At other times he does not interfere with his subordinates within the field of their own responsibilities. The company commander has his own duties, as described herein. Commanding the platoon is not one of them. Nevertheless it is his function to see that the platoon commanders properly perform their own duties. As long as they do so he does not interfere.

Employment of the supports. The company commander determines when the situation calls for the employment of his support echelon, or a portion of it, to assist the assault echelon. Such a situation would be when his attack was failing to progress or in grave danger of counter attack, by reason of lack of man power, or when *man power* as well as fire power is needed. For example, to replace serious losses in the assault echelon, to envelop a hostile resistance which has held up the advance, to repel counter attacks from the front and especially from the flanks, to exploit a success, additional man power may be required. This is furnished by the employment of the supports.

Assault platoons, having captured their immediate objectives, often lack sufficient power for sustained maneuver or even resistance. If both sections have been employed in the assault the platoon will be more or less disorganized, with no reserve strength, and not fully prepared either to exploit its success by continuing its advance, or even to defend itself, until it has been reorganized.

In such cases the company commander may, according to his estimate of the situation, employ his supports to:

1. Continue the attack or pursue the retreating enemy.
2. Take up a temporary defensive position beyond the captured objective to cover the reorganization of the assaulting troops, pending a resumption of the advance.
3. Occupy the captured position and hold it against counter attack, or organize it for longer occupation.

Fire Support of Accompanying Weapons.

The company commander from personal reconnaissance and the reports or requests of his platoon leaders, will determine also when the fire support of the accompanying weapons of the battalion is necessary to advance the attack of the company. Such assistance may be required in the following cases:

1. When the progress of the assault platoons is held up by the cross or flanking fire of elements of the enemy which the platoons cannot reach because of their being too far outside their zones of action.
2. When hostile machine guns are located behind cover which renders them largely immune from the rifle fire of the assault platoons.
3. When the volume of the hostile fire (especially machine guns) is so great and the field of fire is so favorable to the defender that the rifle fire of the attack alone is insufficient to establish fire superiority.

4. When the lack of cover and the enemy's dispositions are such as to prevent maneuver against the flanks of the enemy, and compel the assault platoons to make a frontal advance in open terrain greatly exposed to fire.

The fire assistance available to forward the attack of the company may include artillery, howitzer weapons (light mortars and one-pounders) and machine guns. The characteristics of these weapons have been discussed in some detail elsewhere in this course, and in the courses in Machine Guns and Howitzer Company Weapons. To appreciate the conditions under which the fire of these weapons will aid him, the nature of the targets which each can successfully attack, and the information they require in order to intelligently direct their fire, the company commander should have a general knowledge of the powers and limitations, the organization and tactics of the weapons.

Divisional artillery. The divisional artillery usually functions in large groups (regiment or battalion), with definite missions, assigned by brigade or division commanders. These missions are of a general nature, the artillery is not in intimate contact with the small infantry units and cannot readily change its program on short notice to meet the local needs of such units.

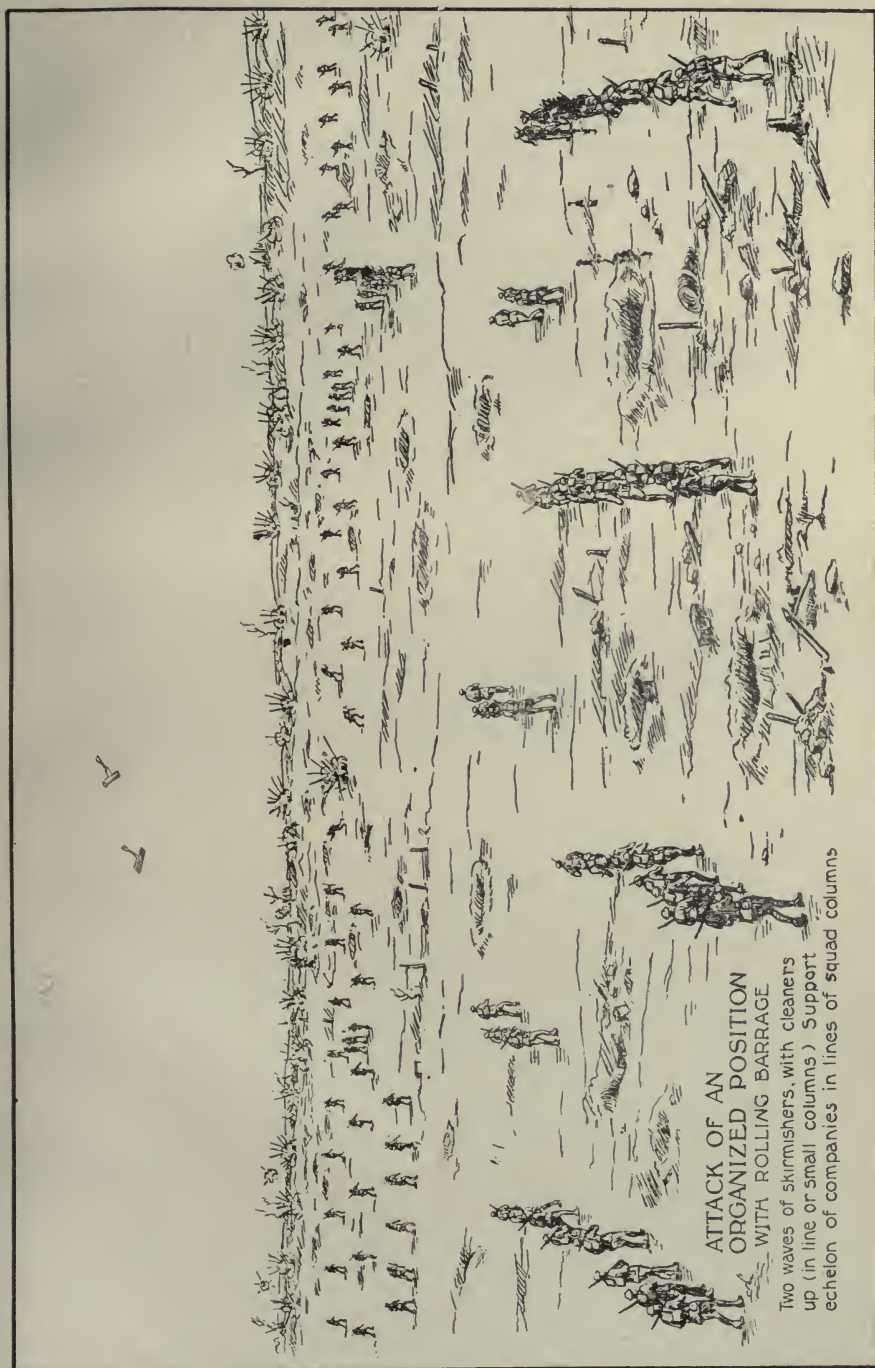
The company commander will not be able to control, direct or influence the fire of the divisional artillery. He should know of its mission or program (barrage or covering fire), appreciate the assistance that it affords him, and conduct his operations so as to utilize this assistance to the fullest possible advantage. For example, if the attack is to be made behind a rolling barrage, the company commander must have the time table of the barrage (Plate 5), and follow close behind it in order to take full advantage of the protection it affords. If he fails to keep up with or "loses" the barrage it cannot be readjusted to meet his needs.

Infantry batteries. These batteries function under the direction of infantry brigade or regimental commanders. They are thus more intimately associated with the infantry than is the divisional artillery. Unlike the divisional artillery they seldom have any rigid program prepared in advance. It is their function to support the assaulting infantry by meeting developments of the combat which could not be provided for in advance. This support usually takes the form of concentrations of fire on definite localities indicated by the infantry commanders. The infantry battalion commander in the front line is ordinarily the person to see and appreciate the need for such assistance, to request it, and to furnish the information necessary for its proper application.

The company commander should know whether or not his attack is supported by infantry batteries, and should inform his battalion commander of situations in which the fire assistance of these batteries is needed. For example, if the advance is opposed by hostile machine guns, in such numbers and so well protected by cover as to require a strong concentration of artillery fire to destroy or neutralize (silence) them, such situation calls for the intervention of the infantry batteries. The company commander should bring this situation to the attention of the battalion commander, indicating the locality where fire is needed. The battalion commander requests the fire support of the infantry batteries, and furnishes the information necessary for its proper direction.

The company commander, except as indicated, will not be able to control or direct this fire. It is his duty to recognize the need for it, to indicate this need and point out the locality, and to take full advantage of the cover or protection afforded, to push his advance.

Accompanying guns. These consist of one or two guns placed at the disposal of infantry battalion commanders in the first line. As compared with the infantry batteries they have less fire power, by reason of a lesser number of pieces, but they are in more intimate contact with the infantry, entirely under the control of the infantry battalion commander, and their fire can more promptly be applied to meet the needs of the infantry.



The relation of the infantry company commander to these pieces is somewhat closer than in the case of the infantry batteries. He does not control their fire, but he can count upon obtaining it more promptly upon request. Due to the proximity of the weapons and the presence of the trained observers of the artillery, the infantry front line units will often be able to point out the targets for these pieces by means of tracer bullets visible to the artillery observers. A simple sketch indicating the nature and extent of the target, and its direction and distance from some easily recognizable landmark, will furnish all the information needed by the artillery commander to properly direct his fire.

To recapitulate: The divisional artillery operates in accordance with a program prepared in advance. This program cannot be varied nor departed from to meet the needs of the infantry company, which must adapt itself thereto. The infantry batteries are assigned to meet the larger emergencies of combat in the support of the front line infantry units. The company commander should recognize the occasions when a relatively strong concentration of artillery fire is required, advise his battalion commander of such situations, and furnish the information necessary to direct the fire. The accompanying guns are assigned to the immediate control of infantry battalion commanders to promptly meet the smaller emergencies of combat in the support of the front line infantry units. Their fire should be applied with promptness upon information by the company commander to his battalion commander. In all cases of artillery fire support the company commander must anticipate its application, and be prepared to take full advantage of the protection afforded as soon as the fire is applied.

Howitzer Company Weapons.

These include light mortars and one-pounder cannon, which are a part of the infantry regiment, and are generally placed at the disposal of the commander of the infantry front line battalion to support his attack. His control of these weapons is accordingly similar to that which he exercises over accompanying guns of the artillery. But inasmuch as these small weapons are more mobile than the artillery and operate closer to the front and in more intimate contact with the front line infantry units, their fire can be applied to meet the emergencies of combat more promptly than that of the accompanying guns.

These weapons are usually assigned to infantry battalions by platoon. A platoon consists of a headquarters section, a light mortar section, and a one-pounder (37 mm.) section, each including one gun. The platoon operates as a unit, each weapon attacking the targets suitable to its characteristics.

Characteristics of the light mortar. These characteristics are briefly as follows: The light mortar fires a relatively large charge of explosive on a curved trajectory. It has little penetrative power, but a relatively large radius of action for targets not protected by cover. Due to its curved trajectory it can reach hostile personnel or material behind vertical cover, and can fire over the heads of advancing troops until they are quite close to the target. By reason of its large radius of action it can be used to attack small areas in which targets are known to lie, but whose exact position within the area is unknown. The large bombs have a range of about 800 yards, the small ones a range of about 1800 yards. The ammunition is heavy and is rapidly consumed when firing. The ammunition carts carry 42 rounds each. When the carts can no longer proceed the section is able to transport by hand the weapon and 28 rounds of ammunition. Additional carrying parties may be provided, but even under favorable conditions the ammunition supply of the light mortar is a serious and difficult problem. Accordingly, the fire of this weapon must be sparingly used. It should be employed only to attack definite targets, and should not be used to shell large areas on a chance that something may be located therein.

Characteristics of the one-pounder. The one-pounder is a small cannon, having (as compared to the mortar) a flat trajectory and great accuracy. It has an effective range of about 1500 yards, and at a range of 1000 yards can register direct hits on

a target 1 foot high by 2 feet wide, within 25 shots. It has little penetrative power and a small radius of action. It therefore depends for its effect on direct hits. The ammunition carts carry 224 rounds, and the section can carry by hand the weapon and 192 rounds of ammunition. The weapon supplements the light mortar in attacking targets whose exact location is known. It is sufficiently accurate to place shots in the embrasure of a machine gun emplacement, and a direct hit will destroy a machine gun. The weapon is also effective against tanks.

These weapons are especially useful in attacking hostile machine guns. If the exact position of the machine gun be known it can be put out by a direct hit of the one-pounder. If the machine gun is known to lie within a small area it can usually be reached by a few light mortar shells dropped in the area. Hostile troops assembled for counter attack in areas defiled from rifle fire may be reached by the light mortar.

The infantry company commander should be familiar with these characteristics, he should recognize the targets that may be successfully attacked by the light mortar or one-pounder, advise his battalion commander of the presence of these targets, furnish the information necessary to properly apply fire, and take advantage of it when applied.

Due to their close proximity to the firing line the targets may be indicated to these weapons by tracer bullets. Or a trained runner may be sent back to point out the target to the gun commander.

Machine guns. A machine gun company, consisting of two platoons of four guns each, is a part of every infantry battalion. The characteristics of the weapon and its tactical employment are discussed elsewhere in this course. Briefly the gun is able to deliver a great volume of accurately directed small arms fire, which is, however, effective only against personnel. Its extreme effective range is about 2500 yards. The weapon may be employed in either direct or indirect fire. It is most effective when used for direct fire, that is, when the gunners see and aim directly at the target. On rolling ground affording positions with some command it may be used to fire over the heads of advancing infantry up to the time they are 2000 yards from the guns. When overhead fire is impracticable the gun may fire from positions on the flank or through gaps in the line, or it may, if cover is available, be placed in the infantry firing line. When none of these are practicable indirect fire methods may be used. The fire of the machine gun is most effective when delivered in enfilade, parallel or nearly parallel to the front of the target.

The machine guns may be assigned by platoon to the support of the infantry companies in the assault echelon. In this case communication between the infantry company commander and the machine guns is easy and direct. The infantry company commander, except when the company is acting alone, does not directly command the machine gun platoon assigned to support him, but he controls and directs its fire. Agents of the machine guns are attached to the rifle company headquarters to maintain close contact with the assaulting troops, and to locate targets suitable for machine gun fire. The company commander uses these agents for direct communication with the machine guns. Targets may be designated by tracer bullets or pointed out directly to the machine gun agents. The contact between the assault companies and their supporting machine guns is thus very intimate. The company commander is able to promptly apply their fire to any suitable target without the intervention of higher authority.

When the situation indicates that machine gun support will be especially needed on a portion only of the battalion front, when the terrain in the zone of action of one of the assault companies is not suitable for the effective employment of the machine guns, when the probable nature of their employment is uncertain, or in other situations, the battalion commander may decide either to assign his entire machine gun company to support one or another of his assault companies, or to retain it under his own immediate control to support the battalion attack as a whole. In the former case the infantry company commander directs the fire of the machine guns (although he does not command the machine gun company). In the latter case

an assault company needing machine gun support communicates the request and information to the agent of the machine gun company, if there be an agent present. Otherwise the request is sent to battalion headquarters.

Machine gun fire is a most valuable support to the infantry attack and should be used to the fullest extent which the terrain permits, direct fire being preferred. The rifle company commander must, as in the case of other accompanying weapons, be able to recognize the situations where machine gun fire may be applied to advantage, and to send requests and information necessary to secure such fire. The machine gun company sends to his headquarters trained personnel to assist him both in recognizing suitable targets and transmitting requests and information.

Constant reconnaissance and personal observation, the ability to quickly estimate a situation calling for fire support, and a knowledge of the characteristics of the various accompanying weapons, will enable the rifle company commander to take the fullest advantage of this most valuable assistance in the progress of his attack.

Security. The security of the company in combat is insured by:

1. Constant observation and reconnaissance which give due warning of any impending danger.
2. Contact with adjacent units, especially those on the flanks who by their positions afford security in those directions.
3. The proper use of the supports, especially in guarding the flanks.
4. Fire of accompanying weapons, especially the machine guns, which will be in or can promptly take a position to guard the flanks.

Ordinarily the assault platoons will be able to protect their own fronts. But they usually suffer a temporary disorganization following an assault on a hostile position. In this case they are greatly exposed to sudden counter attack, and the company commander must be ready to use his supports, still in hand, to protect the assault echelon until it has reorganized.

Security to the flanks is usually sufficiently insured by the presence of other units. If, however, the company is acting alone, or on an exposed flank, the commander will put out a flank combat patrol for security. The size, conduct, etc., of such patrols has been heretofore discussed.

Supply. The arrangements for supply in the small units have been discussed earlier in the course. During the combat the most important supply is that of ammunition. The responsibilities of the company commander in the supply of ammunition during battle are limited to keeping a close watch on the state of supply in his own unit, and furnishing ample warning to his battalion commander when the supply is getting low.

Evacuation of wounded and prisoners. The evacuation of wounded and prisoners is discussed and illustrated elsewhere in the course.

The care of the wounded is the function of the medical department. The company commander should satisfy himself that his wounded are receiving proper attention, as this is a most important element of discipline and morale.

Unwounded combatants are never permitted to leave the assault echelon for the purpose of caring for wounded or escorting them to the rear. The company commander will see that this regulation is obeyed.

The wounded should be placed in safe positions, without being moved any farther than necessary. They should be given first aid as far as possible, or assisted therein. This may often be done by members of the support echelon when it does not result in dispersing them too greatly. The wounded having been made as comfortable as possible, are left until the medical personnel can come forward and pick them up.

In case of a retreat, however, every effort should be made to remove the wounded, and they should not be allowed to fall into the hands of the enemy, who cannot be expected to give them proper attention until he has cared for his own. In this case the medical personnel should be sent forward and assisted by combatant troops specially designated by the company commander, make every effort to remove the wounded to a place of safety, however great the risk involved. (See course in Hygiene, Sanitation and First Aid.)

Prisoners are sent by the company to battalion headquarters under the smallest guard that circumstances permit. Slightly wounded men may be used for this duty. The prisoners should not be allowed to dispose of any documents on their persons at the time of their capture. If opportunity affords they should be searched, and all documents removed. These are sent back with the prisoners and turned over to the battalion intelligence officer (Bn. 2).

Assistance to neighboring units. It frequently happens that the advance of an assault unit is held up by fire of an element of the enemy outside its zone of action. The machine guns of the defense habitually direct their fire parallel or obliquely to the front, from positions a considerable distance to the flank. The company cannot leave its zone of action to attack these hostile elements, but must rely upon its neighbors to do so. As a rule then, the greatest assistance that any unit can render to its neighbors is to push on and reduce the positions that may be firing upon them. Often also the advance of one platoon or company will cause the enemy to retire from an adjacent sector by reason of the threat against his flank, thus permitting other units to advance. Generally the assistance of one unit to another will be thus indirectly given. The company should not leave its assigned zone of action unless a particularly favorable opportunity to assist a neighbor is afforded. In some cases the company commander may use his supports to attack the flank of a resistance that is holding up a neighboring unit.

Reports to superior commanders. See conduct of the platoon in the following lessons. It is the duty of the company commander to keep his battalion commander advised of the situation within the company zone of action. Requests for assistance will be more intelligently complied with if the superior commander is posted as to the situation. The higher command measures the progress of the attack and the success attained, by the position of the front line units. This information must usually come from below.

Notes.

Practical Exercise 2, Offensive Combat, should be taken in connection with this lesson.

SIXTEENTH LESSON.

THE RIFLE PLATOON.

Introductory Remarks.

The ultimate purpose of the concentration of troops and their deployment at the point of attack is to place the infantry rifle platoon in the proper position to advance against the enemy. The purpose of all the auxiliary arms and services is to prepare the way for the movement of this platoon to the locality selected for deployment, and to support and facilitate its subsequent operations.

All the intricate organization of the army and all the problems of commanders of every grade are concerned with the proper entry of the platoon into battle, its control, direction, reinforcement and support by the fire of the auxiliary weapons, and with forwarding at the proper times and to the proper places the necessary supplies of ammunition, food, water, etc., to sustain the platoon in its attack.

The battle itself, at the point of contact with the enemy, is essentially a platoon leader's problem. However great the forces engaged the combat consists of a number of local fights by infantry platoons, acting chiefly on their own initiative. It is the exception rather than the rule when company, battalion and higher commanders can influence the conduct of the assault platoons by means of information and orders, once they are committed to the attack.

It is the function of the higher commanders to commit the infantry platoons to the attack in sufficient numbers, at the proper times and places, properly equipped, with all necessary information, definite missions, and clear and unmistakable orders. Thereafter the higher commanders influence the course of the combat by the timely and skilful use of supports and reserves, and careful and effective direction of the fire power of the auxiliary weapons in supporting and protecting the assault platoons.

The infantry platoon, its personnel, its leaders and its conduct in battle, is accordingly the problem with which we are chiefly concerned.

The training of the prospective platoon leader should give him a very definite knowledge of the problems with which he will be confronted, of the principles which must guide him in their solution; of the actual duties he will be called upon to perform, and the manner in which he should use the means at his disposal in the performance of these duties.

Organization.

The *infantry platoon* is the smallest infantry unit which is habitually deployed in depth, and which therefore possesses the power of relative maneuver of its parts. It is the largest unit permitting of direct personal leadership and fire control in battle.

The infantry rifle platoon consists of one 1st or 2nd lieutenant, platoon leader; one sergeant (platoon sergeant), second in command; four privates, runners, agents of communication for the platoon leader; and two sections.

Each *section* consists of one sergeant, section leader; one corporal, section guide and second in command; and three squads. The three squads of the 1st section are designated as 1st, 2nd and 3rd; those of the 2nd section as 4th, 5th and 6th.

The *squad* is the smallest integral unit in the infantry organization. It consists of a corporal, who is squad leader, and seven privates. It is permanently organized, equipped and trained, so as to possess in itself all the essential elements of a complete fire and maneuver team. (See Musketry.)

In close order formation the squad is in two ranks (front and rear) with 40 inches distance between ranks, the men in each rank being numbered from 1 to 4, inclusive, beginning on the right. It deploys for combat as prescribed in drill regulations and as shown in Plate 34. In this deployed formation each man has a definite position, which is that in which he can best perform the particular combat function as a part of the squad team, for which he is specially trained and equipped.

The positions, duties and equipment of the members of squad are of fundamental importance, for thereon depend the fire and maneuver team-work of the squad and platoon. They are as follows:

| Position | Duty | Equipment |
|--------------------|---|---|
| No. 1, front..... | Scout (senior) | Rifle, bayonet, tracer ammunition. |
| No. 1, rear..... | Assistant scout | Rifle, bayonet, tracer ammunition. |
| No. 2, front | Rifleman and rifle grenadier... | Rifle, bayonet, grenade discharger, rifle grenades. |
| No. 2, rear..... | Rifleman | Rifle, bayonet. |
| No. 3, front..... | Rifleman and substitute automatic rifleman..... | Rifle, bayonet. |
| No. 3, rear..... | Automatic rifleman | Automatic rifle, 10 magazines, 1 magazine filler, 1 spare parts case. |
| No. 4, front..... | Corporal, squad leader | Rifle, bayonet, 1 magazine filler, 1 jointed cleaning rod, tracer ammunition. |
| No. 4, rear | Rifleman, second in command.. | Rifle, bayonet. |

Each rifleman, in addition to his own ammunition, carries one web pocket containing two automatic rifle magazines, except number 2, front rank, who carries rifle grenades. All carry extra ammunition for the automatic rifle, in bandoliers. The automatic rifleman and squad leader are equipped with magazine fillers for filling the automatic rifle magazines with the extra ammunition. All men may carry hand or rifle grenades when these are needed.

The Platoon Leader.

So far as his own particular responsibilities are concerned, the platoon leader in attack must deal with problems involving the enemy, his own men, their weapons, the terrain on which he is to operate, and the elements of time and space.

There are 57 men in the rifle platoon: 1 platoon sergeant, 2 sergeants, 8 corporals, 46 privates 1st class and privates. All of these take part in combat. The rifle

platoon is exclusively a combat unit. Each subordinate leader and each man has definite duties to perform and a definite part in the battle team-work of the platoon.

Recent experience in combat indicates that 7 men is the greatest number which one man can personally lead and direct. The infantry squad consists of 7 men led by a corporal.

The platoon leader controls and directs his platoon through his two section leaders. The section leaders in turn control and direct their sections through the squad leaders. The latter control but 7 men.

Training of the Platoon.

The platoon leader is responsible not only for the leadership, but also for the discipline and training of his subordinate leaders and his men. His success in battle is very greatly dependent on the excellence of their training.

Fifty-one men of the platoon are armed with the rifle and bayonet. Of this number, six (one in each squad), are equipped with rifle grenade dischargers. Six men, one in each squad, are armed with the automatic rifle. All men are supplied with hand grenades when there is occasion for their use. Scouts and subordinate leaders carry tracer ammunition.

The platoon leader must be a skilled expert in handling these weapons, and he must be able to give his men the necessary technical training which will insure the maximum of efficiency in their use.

This training is included in the courses in the technique of infantry weapons. It embraces:

- a. Rifle marksmanship.
- b. Mechanical training, automatic rifle.
- c. Marksmanship, automatic rifle.
- d. Use, care, transportation and preparation (fusing and arming) of hand and rifle grenades.
- e. Hand grenade throwing.
- f. Rifle grenade marksmanship.
- g. Bayonet training.
- h. Hand to hand fighting.

This training must provide within each squad men skilled in the use of the automatic rifle and rifle grenade, and other men who can replace them when necessary.

The platoon leader and his subordinates must have a good, practical working knowledge of the powers and limitations of these weapons; of their powers, that they may not fail to employ them to the best advantage; of their limitations, that they may not attempt the impossible with one weapon, wasting time and ammunition, and perhaps sacrificing valuable lives, while there is probably within the squad another weapon adequate to the task in question.

For example, each squad leader must know that the most effective rates of fire for an average rifleman are 7 shots per minute at 600 yards, and 10 shots per minute at 300 yards. He should know the following simple "rule of thumb" for the most effective rates at all ranges, thus:

"Thirteen minus the range in hundreds of yards gives the most effective rate of fire per minute for all ranges up to 1000 yards."

Having this practical knowledge and simple rule concerning the use of the rifle the squad leader can insure that his men use their rifles to the best advantage, without waste of ammunition.

Take another example: The maximum effective range of the rifle grenade is 200 yards. If the section leader knows this he will not order a squad to attack a machine gun with rifle grenades at a range of 300 yards.

A thorough knowledge of the powers and limitations of the weapons is manifestly necessary to their proper use. These matters are included in the courses in the technique of weapons.

The platoon leader must discipline his men. He must train the men of a squad to move together, the squads to move together in sections, and the sections to move and maneuver as parts of the platoon, all in response to the prescribed commands or signals.

This discipline of mind and body, this training in orderly movement, is the function of infantry drill. It is covered in the courses in infantry drill and physical training.

The platoon leader must train his men to operate alone or in pairs as scouts and observers, in small groups as patrols, to accomplish small definite missions such as observation, reconnaissance, maintenance of contact, combat, etc. He must train his non-commissioned officers to lead such patrols. This training is covered in the course in Scouting and Patrolling.

The platoon leader must train his various subordinate leaders and their men as effective teams in the skilful combination of fire and movement which constitute combat. This training in the technique of fire and movement is covered in the course in Musketry.

The platoon leader in the attack will receive orders which will give him a definite mission, a definite time for action, and definite limits of space in which to carry out his mission. The enemy, the nature of the terrain and other elements of the situation will impose further limitations.

To avail himself of the advantages afforded by the terrain while evading its disadvantages, he must be able to visualize from his map the unseen ground on which he is to operate. He must be able to determine his own position on the map at any instant and to recognize on the terrain the features portrayed on the map. He must be able to establish and determine directions, both on the map and on the ground. The training which will enable him to do these things is given in the course in Map Reading.

In addition to a thorough knowledge of his own organization, weapons and tactical methods, the platoon leader should be familiar with those of the enemy—his organization, the powers and limitations of his weapons, his tactical methods. For example, the enemy is in retreat. The platoon leader identifies an occupied position 120 yards in extent. If the enemy's organization is similar to our own the position is probably occupied by a section. Sections work in pairs, in platoons. In retreat one covers the withdrawal of the other. Probably, therefore, the second or rear section will be encountered when the leading section has retreated. This knowledge concerning the enemy's weapons and tactics is essential in order that the platoon leader may correctly judge the enemy's strength and position from the indications which he perceives, divine his probable intentions and thus correctly estimate the situation which confronts him, and lay his plans accordingly.

The platoon leader must understand the usual methods in the organization of the ground for defense. He must be able, from visible indications, to visualize the dispositions of the hostile combat groups holding the tactical points of the terrain; the combination of combat groups into strong points, the organization in depth, the strength and positions of supports and reserves, the routes of movement, and the probable operations of counter attack, including the directions from which they will probably come, in case he succeeds in penetrating the hostile position.

These matters are discussed in the course in Field Engineering and in the subject of Defensive Combat in this course.

The platoon leader must have a good practical knowledge of the theory of fire. He must know that a rifle or machine gun bullet has an angle of fall of $\frac{1}{2}^{\circ}$ at 600 yards, 1° at 800 yards, 2° at 1200 yards. He must be able to distinguish between at 2° and a 5° slope in order to select cover.

He must know that the average effective area of burst of a 3-inch shell covers 30 to 40 yards. This will guide him in deploying his squads so that one burst cannot reach more than one squad. He must know the size and shapes of the machine gun

sheaf of fire and its effect at various ranges on line or column targets (Technique of Weapons).

He must know how his platoon appears to the enemy, in various formations and at various ranges. This knowledge of the visibility and vulnerability of formations will enable him to employ suitable formations and to utilize cover to the fullest advantage. For example, in the course in Technique of Weapons we learn that a machine gun can best attack long, deep targets. Therefore, if the platoon leader advances in column formation against aimed machine gun fire he is offering to the enemy exactly the target that the latter would desire.

In every situation the terrain will present certain advantages and certain disadvantages. The leader must be skilful in availing himself of the advantages and evading the disadvantages.

The test of the platoon leader's efficiency will be his ability to so train and discipline his men and to so conduct them in combat as to achieve the maximum of results in the minimum of time, with the minimum of losses, and within the limitations imposed upon him by his orders and by the situation.

The Platoon Sergeant.

The platoon sergeant is second in command in the platoon. His duties include: (a) Replacement for the platoon leader, and (b) assistant to the platoon leader.

The importance of the platoon in battle, the sudden emergencies with which it is constantly confronted, and its dependence on the prompt action of its leader, are sufficient indication of the prime necessity of having a second in command always ready and near.

The platoon requires continuous leadership and control. To be prepared to take over command, usually on short notice, the platoon sergeant should be able to see what the leader sees. He should know what the leader does and what he plans to do. These facts indicate that the platoon sergeant should be near the leader, unless there is a definite reason for his being elsewhere, that he should always be in close touch with the leader, and that he should not be tied down by being placed in command of a section.

As assistant to the platoon leader the platoon sergeant has certain definite duties, relieving the leader of some of his responsibilities. These duties are discussed later.

The platoon sergeant evidently must have the personality and training which will qualify him to fill the position of platoon leader.

Subordinate leaders. Section leaders, section guides and squad leaders all have definite duties in combat, which are concerned chiefly with the conduct of fire, and covered in the course in Musketry. These duties, in their tactical aspect, will be discussed later in this course.

Phases of the Attack.

The platoon leader in attack will usually be confronted with four successive phases:

1. *The approach march.* Until it reaches the zone of effective rifle fire the platoon cannot employ its weapons. It moves to the point at which the fire fight is to open, in suitable formations, maintaining the proper direction and rate of advance, and providing for security and contact with adjacent units.

2. *Entry into the attack.* Before entering the fire fight the platoon leader must estimate the situation, prepare a plan of action, and issue definite orders to the leaders of the two sections, who are to carry out his plan.

3. *Conduct of the attack.* The conduct of the platoon in the attack, the skilful combination of fire and movement in effecting an advance which culminates in a shock

assault on the hostile position, is the supreme test of the platoon leader and his soldiers, and the most important phase of military operations.

4. *Reorganization.* At the conclusion of the assault the platoon leader must promptly reorganize his platoon and prepare for his next subsequent operations, whether to resist counter attack or to continue the advance. Counter attack on troops who have executed an assault is the rule rather than the exception. Unless every gain be tenaciously held the fruits of a successful attack may be lost.

The problems of the platoon leader in each of these typical phases of the attack will be discussed in detail; the principles which should guide him in their solution will be enunciated, and their concrete application indicated; the definite duties which constitute the solution of these problems will be stated; and the manner in which the trained platoon leader performs these duties will be thoroughly explained and illustrated.

SEVENTEENTH LESSON.

THE APPROACH MARCH.

Approach March of the Battalion and Company.

The infantry battalion extends from its column of route (breaks into company columns) when the proximity of the enemy or the probability of encountering artillery fire makes such extension advisable.

The usual reasons for this extension or partial deployment are:

1. To break the battalion column of route into smaller columns which can better utilize such cover as is available, avoid danger areas (artillery concentrations and gas), and localize and minimize the effects of hostile artillery fire.

2. To effect a preliminary deployment, placing the companies of the battalion in the echelons (assault and support) in which they will probably be initially employed in the combat, and if practicable in their proper zones of action or approximately so. This facilitates later deployment.

3. To facilitate deployment in a direction other than that of the march, should unexpected developments make this necessary.

At this time the companies will be forced to separate from their combat trains and such extra ammunition (or rations) as are to be carried on the persons of the men, will be issued by direction of the battalion commander.

When the companies, leaving the battalion column of route, reach their approximate zones of action, the same considerations which dictated the extension of the battalion will ordinarily also cause the companies to extend by platoon, which maneuver will accordingly shortly follow the extension of the battalion. The platoon commander is thus confronted with the problem of conducting the approach march of his platoon.

APPROACH MARCH OF THE PLATOON.

The mission of the platoon leader in this phase of the combat, is to bring an organized and controlled unit, intact, at the proper time, to the exact place at which it is to enter the fire fight.

The orders of the company commander will give him certain aids and impose certain restrictions for his guidance. The company commander will designate a base platoon to guide the movement, prescribe intervals and distances, the direction and rate of advance, giving to each platoon its (at least approximate) zone of action.

Problems of the Platoon Leader.

In the usual case, to properly perform his mission at this stage, the leader of the rifle platoon must solve five problems, to-wit:

1st. To maintain the proper direction of advance.

2nd. To regulate the rate of advance.

3rd. To maintain necessary contact during the advance.

4th. To provide for reconnaissance of the terrain traversed.

5th. To provide for the security of the platoon during the advance.

The principles which must guide the platoon leader in solving these problems are simple and definite. It is with their practical application that we are now especially concerned.

Maintaining the direction of advance. The platoon leader maintains the direction of advance by the use of his compass. If he can lay off this direction on a map he will be able to note the prominent features of the terrain, their directions and distances from the localities he will occupy at intervals during his advance. This will afford him a continual check or means of verification of his direction and lateral position. He can tell whether he is moving within his assigned zone of action, or parallel to it at a distance of one or two hundred yards to the right or left.

It is especially important that he have such checks on his direction and position as he emerges from woods in which visibility has been limited, and on approaching the line of departure for the attack—usually some feature of the terrain parallel to the front, such as a road, stream, valley, ridge, etc.

Another check on the direction (as well as the rate) of advance, is the position of the platoon at any time, relative to the base platoon of the company.

The direction is best maintained when it is effected "by bounds." To do this the platoon leader from one covered position (for example a good reverse slope), selects the next available cover on his route (for example a small wood). He verifies the direction with his compass, and selects one or more prominent features of the terrain as guiding points. These should be visible from all points on the line of march between the two covered positions. He points out these direction points to his scouts and his base squad, and sees that they march on them. For the next bound the procedure is repeated, a new direction point being selected if necessary. If a distant point which is on the right line can be chosen, it may serve as a guide for several bounds.

A base squad is designated as a guide for the march of the platoon (when deployed in squad columns), for the same reasons that a base platoon is designated for the company.

Regulating the rate of the advance. The platoon leader regulates the rate of advance by causing his base squad to guide on the base platoon, and by requiring the other squads of his platoon to guide on the base squad.

Contact during the advance. The platoon leader can ordinarily maintain contact with the units on his flanks by observation. He uses his runners for this purpose. As a matter of routine one observes the unit on the right, another the unit on the left.

The platoon leader moves in advance of his platoon, close enough to his scouts to have visual (sometimes verbal) contact with them, whenever practicable. He uses his runners as connecting files between himself and the scouts to the front or flanks.

While in this position the leader insures contact with his platoon by:

1. Placing the platoon sergeant (second in command) in such a position that he can supervise the movements of all elements. Generally this position will be between the two sections.

2. By charging one of his runners near him, with constant observation to the rear, and constant visual contact with the platoon sergeant.

The platoon runners, when used to maintain contact, must never be beyond range of verbal communication with the platoon leader (hailing distance).

The platoon leader maintains contact with the company by sending one of his four runners to the company headquarters as an agent of communication between the company commander and himself.

Contact within the platoon is also facilitated by the designation of a base squad. The leader supervises the deployment of the platoon on the base squad, prescribing intervals and distances. Thereafter he closes and extends these intervals as the nature of the terrain and the conduct of the enemy require, always providing for a

complete chain of visual (and as far as possible, verbal) contact between himself and all elements of the platoon, and between elements.

Reconnaissance. The platoon leader provides for reconnaissance (for purposes of security and information) by the use of his scouts. Usually the scouts of the leading section, which will be the initial fire unit on entering the combat, will cover the front of the platoon. Each pair of scouts covers the front of the squad to which they belong, usually about 40 to 50 yards. Thus each pair of scouts constitutes a miniature advance guard or point. Like other advance guards it is their duty at the opening of the fire fight to seize a favorable firing position to which the other elements can advance, to mark this position for the troops which follow (the squad), to determine the enemy's location, and to convey this information back to the troops by means of tracer bullets, or otherwise.

If a necessity for reconnaissance to the flanks arises, the platoon leader will usually employ the scouts of the rear section for this purpose.

The leader at this time habitually precedes his platoon for purposes of personal reconnaissance.

Security. These reconnaissance measures provide for both information and security. The platoon leader further provides for the security of his platoon during the advance, by making full use of any available cover, and by adopting suitable formations.

In the advance by bounds, heretofore referred to, the platoon moves promptly from one covered position to the next. Before leaving any such position the next in advance should be carefully reconnoitered and usually occupied by the scouts. The leader selects the best available covered route for the bound, and adopts the formation best suited to utilize this available cover.

The leader and his scouts make careful and systematic reconnaissance to locate all danger areas on the line of advance, localities subject to hostile artillery fire, gassed hollows or woods, etc. The leader changes the direction of march to avoid such areas, or gives timely warnings concerning them to insure the necessary precautions (gas masks ready to put on, etc.).

In passing through a locality where shells are falling the platoon is deployed in lines of squad columns, with such intervals and distances that a single shell burst cannot involve more than one squad.

Duties of the Platoon Leader.

Having considered the problems of the platoon leader and the principles and methods applicable to their solution, we may now discuss in detail his duties during the approach march and the exact manner in which he performs them.

Initial dispositions. The first duty of the platoon leader is to prescribe the initial formation of the platoon. This formation must be simple, flexible, easily assumed or changed by means of simple orders and the authorized commands and signals of the drill regulations.

The two extremes of platoon formations in the approach march are:

- a. Platoon in a single column of squads (route formation).
- b. Platoon deployed in two waves of squad columns (or possibly skirmishers), one behind the other, covering a front of 120 to 200 yards or more; the first wave preceded by scouts; distances between scouts and first wave, 150 to 500 yards, distance between first and second waves, 100 to 200 yards. Each wave would consist of a section.

In formation (a) each section remains intact, in close order, with the section leader immediately in front and section guide immediately in rear.

The following simple orders and commands might be issued by a platoon leader to establish his initial dispositions:

"The enemy is in position beyond that ridge. We advance to the ridge. Direction point, that house on the skyline (pointing it out). Scouts of the 1st section will precede the platoon by 250 yards, diamond formation, Jones in charge."

ASSAULT PLATOON
ADVANCING TO ATTACK.

Open warfare in diversified terrain.
No barrage. First section as skirmishers,
second section line of squad columns.

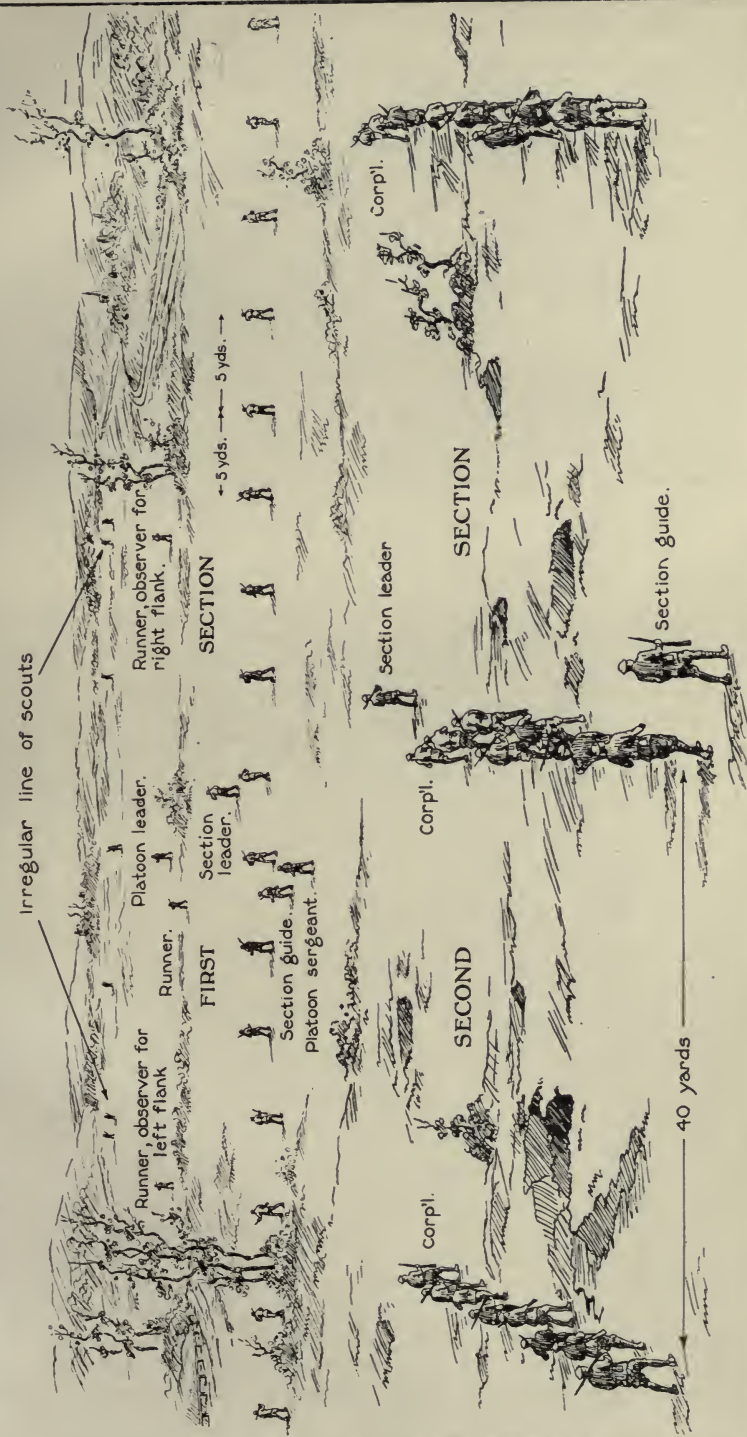


PLATE 30.

The drill regulations command, "Scouts out," will initiate the movement. -An order to the platoon sergeant, "Follow me with the platoon at 50 yards," will regulate distances.

The platoon leader would provide for contact at this time by ordering, "Black and White (runners), follow the scouts at 100 yards. Each of you observe to one flank, keep the adjacent platoons in view." The remaining runner (one runner is with the company commander) would, as a matter of routine, observe to the rear, keeping the platoon sergeant constantly in view.

Regulating the formation. The second duty of the platoon commander is to regulate the formations of his platoon during this phase, as the requirements of security, contact and continuity of advance, the nature of the terrain or the conduct of the enemy dictate. This he does by means of the authorized commands and signals, as far as possible, and by simple orders, transmitted by runner.

Thus as the platoon moves across country the leader may wish to reduce its front so that it can pass up a valley or stream bed. A simple signal, "Section columns," will accomplish this.

As the terrain becomes diversified and rolling he may wish to keep one section always under cover while the other is crossing exposed terrain to the front. He gives this message to his runner: "To platoon sergeant—increase distance between sections to 150 yards."

If an area of swamp land be encountered, and the leader sees a path through it, 150 yards to his right, he signals to the platoon, "Change direction to the right," and himself moves in the direction he wishes the platoon to follow.

If it be desired to increase the distance between the scouts and the 1st section the leader signals to the platoon; "Halt," and subsequently, "Forward," when the scouts have gained the desired distance.

If it be desired to deploy the section columns, for example, to pass through an area subject to intermittent shell fire, the leader signals; "Squad columns," whereupon each section forms a line of squad columns. Intervals are regulated by orders transmitted by runner. In the absence of specific orders the intervals between squads will be about 40 yards.

If it be desired to reduce the distance between sections, for example, to pass through a wood, the platoon leader may halt near the edge of the wood, halt the 1st section here by signal or command, moving it forward again when the 2nd section has closed to the desired distance.

In this duty of regulating the formation during advance, it is essential that the platoon leader place himself in a position where he can see and be seen by his subordinates.

Maintaining the direction of advance. The third duty of the platoon leader is to indicate the direction of advance and see that all elements of the platoon maintain this direction.

As noted heretofore, the leader has two tasks to perform in this connection: First, he must direct his scouts, and second he must direct his base squad. He verifies the direction of advance, selects direction or guiding points, gives this information to his scouts and base squad, and sees that they advance in the direction indicated.

To verify his direction the leader must first make sure of his own location, and that it is within his prescribed zone of action. He notes the position of the base platoon, which he assumes to be near the center of its zone of action. If the zones of action of the platoons be about 200 yards wide the center of his own platoon should be about 200 yards to the right (or left) of the center of the base platoon.

If the platoon leader has a map he may determine his own location by resection on two or more prominent features of the terrain, which he can identify both on the map and on the ground (a corner of a wood, a house, a bridge, etc.). Having determined his own position the leader draws through it (on his map) the direction line. He notes the prominent features of the terrain on or near this line of advance (identifying them both on the map and on the ground). These will aid him in

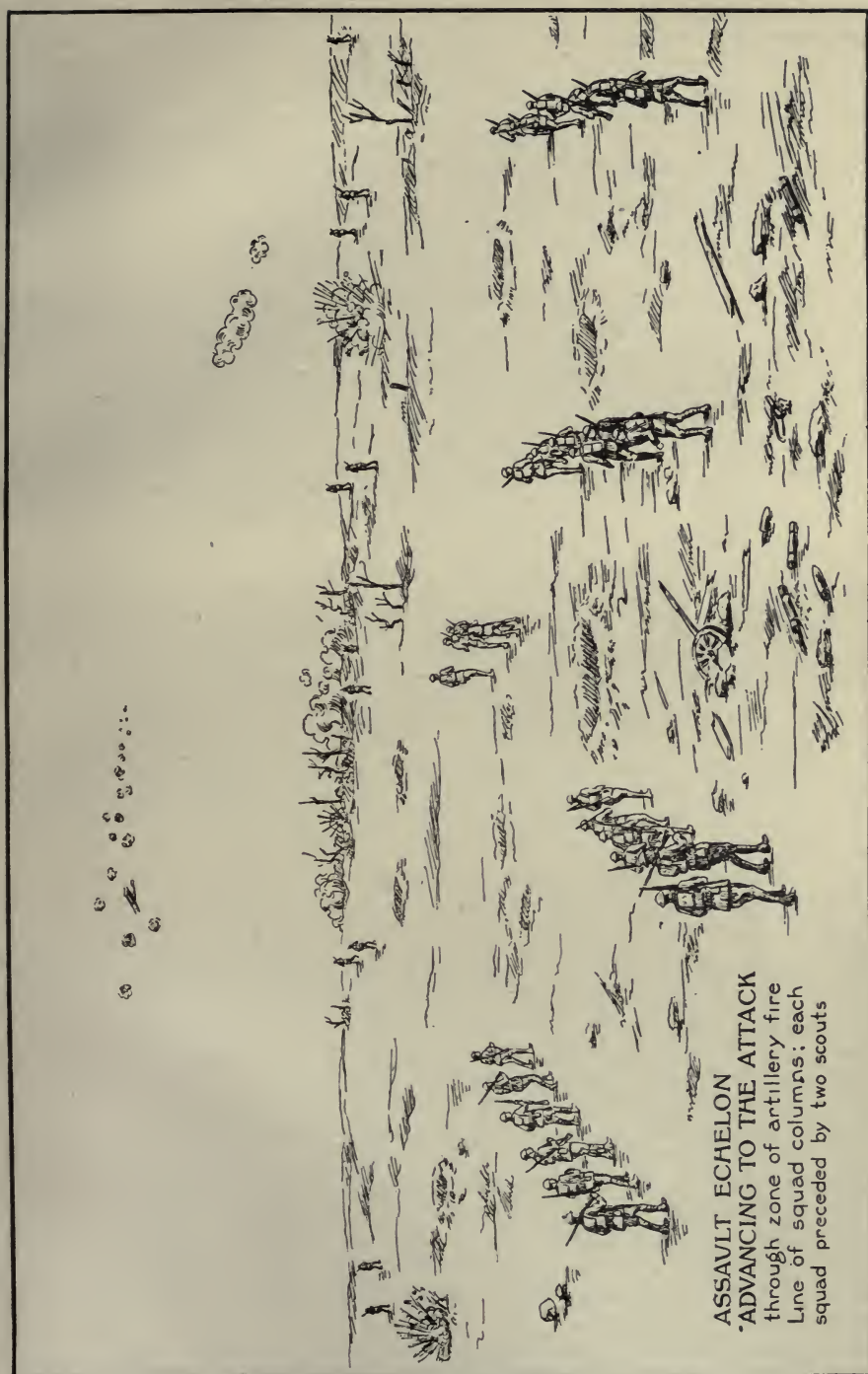


PLATE 31.

maintaining his proper interval and direction. He also notes the positions from which he will probably make "bounds" during his advance (from one ridge to another, from the second ridge to the near edge of a wood, from the near edge of a wood to the far edge, etc.).

Having determined his own position and drawn his direction line, he holds his compass to his eye and turns until the compass reads the bearing or azimuth of his direction of advance. He then picks out the most distant distinct feature of the terrain (lone tree, house on skyline, etc.) which is on his line of advance. This will be his guide or direction point. He verifies its position on the map if possible.

The direction point should be known to all men of the platoon, but especially to the scouts, the leader of the base squad (who must guide on it), and the platoon sergeant.

If the platoon leader himself moves on the direction line he serves as a guide for his base squad. He will also be able to note whether the scouts and the base squad are maintaining the proper direction. The scouts may have compasses and should know how to use them. Nevertheless the responsibility for maintaining direction rests upon the platoon leader. The scouts in front of the base squad (those who belong to it) should carefully maintain the proper general direction. If they fail to do so the platoon leader corrects their errors by occasionally signaling, "Change direction." While it is desirable that the scouts maintain the proper general direction, especially the scouts of the base squad, yet it is to be remembered that the base squad, and not the scouts, is the guide. The scouts have other important duties to perform, and their entire attention should not be devoted to the single problem of maintaining direction.

If it be necessary for the platoon to leave its line of march in order to avoid a danger area, the platoon leader should select some suitable point in advance and on his direction line, returning directly to it as soon as the detour is completed.

Regulating the rate of the advance. The fourth duty of the platoon leader is to regulate the rate of advance.

In his initial order the platoon leader may direct the base squad to follow him at a certain distance. He thus becomes the guide for the movement, so far as its rate is concerned. This arrangement tends to restrict the movements of the platoon leader. Should he find it necessary to leave the direction line he might signal, "Don't guide on me," by placing the hand in the small of the back, palm outward. He may also regulate the advance of both base squad and scouts by occasional signals, "Halt," and "Forward."

Contact during the advance. The fifth duty of the platoon leader is to maintain contact. There are several items involved in this duty:

First, contact must be maintained within the platoon.

- a. Between the leader and the scouts.
- b. Between the leader and the runners.
- c. Between the leader and his subordinate leaders.
- d. Between the section leaders and the squad leaders under them.
- e. Between the (platoon) leader and the base squad.
- f. Between the base squad and the other squads.

Second, contact must be maintained within the company.

- a. With the company headquarters.
- b. With other platoons of the company in the same echelon.

Contact should be maintained with platoons on both flanks, whether or not they belong to the same company.

The measures adopted by the platoon leader for carrying out this duty have already been discussed in preceding pages. Contact is largely a matter of suitable formations and the regulation of direction and rate of advance.

In moving through woods, where the range of visibility is limited, the intervals and distances in the platoon must ordinarily be reduced to the range of visibility. In order to maintain contact with the units on the flanks it may be necessary to send

out the scouts of the rear section as patrols. They form a chain in which the intervals between men are equal to the range of visibility in the woods, connecting with a similar chain on the flank of the adjacent unit. Such patrols are also an aid in providing for the security of the platoon in such terrain.

Reconnaissance. The sixth duty of the platoon leader is to provide for reconnaissance for the purposes of information and security.

The leader himself should make constant personal reconnaissance. Accordingly, he should always be well to the front, as that is where information usually comes from. It is well that he should be able to see what the scouts see. From the available vantage points he scrutinizes the country ahead, using his glasses. As soon as his scouts have found any advanced position safe, the platoon leader promptly moves forward to it, utilizing such cover as is available while moving.

For reconnaissance to the flanks the platoon leader uses his runners. This reconnaissance is local and limited. Units on the flanks make extended reconnaissance unnecessary, provided proper contact is being maintained. If the platoon be on the flank of a line, or if contact with an adjacent unit has been lost, the company commander will cover the flank with patrols from the support platoon. If this be not done the platoon leader may send out a patrol from his rear section.

As a rule, contact with the next unit is all that is necessary in the way of flank reconnaissance. The platoon leader's chief concern in this connection is reconnaissance to the front. This is mostly a matter of personal observation and control of his scouts.

Efficient reconnaissance calls for special training. The scouts of the platoon should be specially trained, and the platoon leader should use them to the fullest possible extent in reconnaissance.

Security. The seventh duty of the platoon leader is the security of his platoon during its advance. The measures necessary for security are included in the performance of the other duties of the platoon leader. Security is a matter of proper reconnaissance, suitable formations and contact. It is also promoted by the method of advancing by bounds, already referred to. Security requires personal reconnaissance by the leader, quick estimates of the situation in emergencies, and clear and definite orders controlling the formations and actions of the platoon.

Notes.

The demonstration of the approach march, Practical Exercise 5, Offensive Combat, is designed to illustrate in a practical way the problems and duties of the infantry platoon leader during the approach march, and how he solves them. It should be carefully studied in connection with this lesson.

EIGHTEENTH LESSON.

ENTRY INTO THE ATTACK.

Orders of the Company Commander.

The rifle company commander, upon receiving the attack order of the battalion, makes his own estimate of the situation, formulates a plan of attack for his company, and issues an initial attack order to his platoon leaders. Usually this order will be issued verbally at the most advanced position it is possible to reach before launching the attack.

The company attack order will include:

1. All necessary available information of the enemy and our own troops.
2. *a.* The general plan of attack.
 5. The combat mission of the company
 - c.* Time of attack.
 - d.* Direction of attack.
 - e.* Line of departure.

- f. Limits of company zone of action.
- g. Supporting weapons, such as machine guns or light mortars, if any.
- 3. a. Definite combat missions of each platoon.
- b. Zone of action of each assault platoon.
- c. Initial position of support platoon and such directions governing its movements as are practicable.
- 4. Administrative details.
 - a. Initial location of battalion and station.
 - b. Instructions concerning evacuation of prisoners.

NOTE.—Administrative details in a company attack order would usually be limited to the above, as the platoon leaders have little to do with administration during the fire fight. They are not responsible for ammunition supply or the evacuation of the wounded. Uniform and equipment for the attack are usually prescribed in advance.

5. Location of company command post.

NOTE.—The company command post is the position of the company commander. The 1st sergeant is the company message center, but as he accompanies the commander in combat the message center will be at the command post.

The platoon leaders take notes as the company commander issues his orders. Usually the platoon leader will be quite familiar with the general situation and with what is known concerning the enemy and his own forces. He will of course note anything new. He is particularly concerned with and should carefully note those portions of the order which definitely prescribe his own mission and the time and place for carrying it out. He should carefully examine his map, make sure that he identifies all localities, distances and directions referred to, and question the company commander on any matters that are not perfectly understood.

The mission of the platoon leader in this phase of the combat is to lead his command into the fire fight.

The orders of the company commander will give him certain information concerning the enemy and supporting troops, and will impose certain limitations as to time and space, for his guidance.

Problems of the Platoon Leader.

In the achievement of his mission the platoon leader will now be confronted with certain definite problems, as follows:

- 1. To determine how each element of his platoon will be best used to carry out his plans, and to decide upon the initial dispositions of these elements on entering the fire fight.
- 2. To determine, that is, to foresee and regulate if practicable, the position from which the attack will be launched.
- 3. To determine, that is, to foresee and regulate if practicable, the time at which the attack will be launched.

The attack order of the company may prescribe the time and place of launching the attack. It will always prescribe the zone of action or front to be covered by the platoon, and may contain certain provisions as to the dispositions of the elements of the platoon. On the other hand the time and place at which the attack will open may be determined by the action of the enemy. It is for this reason that the platoon should be placed at least approximately in its zone of action, during the approach march.

The platoon leader's solution of the problems that confront him takes the form of a plan of attack. This plan is the result of a careful estimate of the situation, and is the basis for the attack order which the platoon leader issues to his own subordinates.

Estimate of the Situation, Plans and Orders of the Platoon Leader.

The *orders* of the platoon leader are always very short, simple and definite, and they never look very far into the future. Usually they are designed to meet the situation of the moment, and fresh orders are issued to meet each development of

the situation as it takes place. The reasons for this will be readily comprehended. The infantry platoon in attack is a very small body and in very close contact with the enemy. The situations which confront it are subject to sudden and unexpected changes. A very small event, occurring within a small area in perhaps a few seconds of time, and which would have no influence at all on the plans of the division commander, might cause a complete change in those of the platoon leader. Also the latter is with his platoon, exercises personal control over it, and is able to give orders promptly to meet any emergency that arises. The period of time necessarily covered by orders varies directly as the size of the unit concerned. Those of the commander-in-chief may cover a period measured by days, even by weeks. Those of the platoon leader cover a period which is measured in minutes or even in seconds.

But while the *orders* of the platoon leader are limited to a single situation, the same is not true of the *plans* on which these orders are based. To be able to meet a sudden emergency promptly with appropriate orders, the platoon leader must have thought of and planned for the emergency in advance. Accordingly, the plans of the leader, as distinguished from his orders, must contemplate not only the situation which immediately confronts him, but all other situations which are reasonably possible. While he cannot foresee what may happen at any particular instant, his training and experience should have made him familiar with the nature of the various situations which may arise during combat, and the measures necessary to meet them. These measures constitute his plans, and when the emergency arises he should be able to sense the situation promptly, and as promptly issue the necessary orders to meet it. Moreover the dispositions of his platoon at any instant, while appropriate to the situation which then confronts them and to the task they are about to undertake, should also be such as to provide against disaster in case of an untoward event, and to permit taking advantage of any favorable opportunity that may be presented. Proper battle formations and increasing vigilance in the way of observation and reconnaissance, will meet these requirements.

The mission. As a basis for his plan the platoon leader must first estimate his situation in the usual manner. The first consideration is his *mission*. If this is perfectly clear to him he should be able to state it clearly and definitely. This he should do, either to himself or to his platoon sergeant, thus: "The mission of this platoon is to advance at 6 a. m., S. 45° E., on a front of 200 yards, the right of the platoon on the line B. M. 51—farmhouse 750 yards SE." This definite statement will serve to fix his mission in his mind and prevent his being led astray by the confusion of subsequent events.

It is always difficult and frequently impossible to send orders to the leader of an assault platoon during the fire fight. He is left largely to his own resources and his mission must be the guide for his conduct. Before adopting any suggested line of procedure he should ask himself, "will this help me to achieve my mission?" Usually his mission will be embodied in the orders of his company commander, but as we have seen, orders cannot provide for an indefinite period. Situations may and will arise in which previous orders cannot be carried out, or to which they are not applicable. In such situations the platoon leader must remember that his platoon is part of a great organization, a team. The mission of this organization is victory, and in a large sense the mission of every component platoon, which remains unaltered whatever the situation, is to do all in its power to contribute to that victory. In a situation in which orders can no longer guide him the platoon leader should say to himself: "My company commander could not possibly have foreseen all that might happen to this platoon when he launched it into the attack. What can I do now to help myself or my neighbors? What orders would my commander give if he were here and could see this situation as I now see it?"

The enemy. His mission being plain the platoon leader must next consider the enemy. The enemy with whom he is chiefly concerned is within his own zone of action. But machine gun and other hostile fire coming from other localities may also be encountered. Where will the enemy be found, and when? What will be his

strength? What weapons will he have? What will be his defensive organization? Will he probably have a few men only, in his advanced lines, or will they be held in strength? His knowledge of the general situation and of the habits of the enemy will serve to guide the platoon leader. Is the enemy retreating? Or has he been in this position for a long time? If the latter he may be counted upon to have strongly fortified it.

His own troops. The platoon leader also considers his own troops, especially the support that he may expect from them. Are there elements on his flanks which will afford him protection against elements of the enemy outside of the platoon's zone of action? What assistance may he expect in the way of machine gun, light howitzer or artillery fire? Will the supports of his company cover his flanks, and assist him in case his advance is held up by hostile fire?

Terrain. The platoon leader next considers the terrain. What portion of the terrain is assigned as his zone of action? Are its limits definite and can he recognize them on the ground itself by means of plainly visible features such as buildings, roads, streams, etc.? What problems does the terrain present? The platoon leader must consider the effect of the terrain both upon himself and upon the enemy. Is it level and open and therefore difficult to cross in the face of fire, or does it afford concealment or cover, or both? Does it afford the enemy a good view and opportunity for long range fire or is he restricted in this way? If the ground is rolling are the reverse slopes steep enough to be defiladed from machine gun fire? Are there any serious obstacles to be passed, such as marshy ground? What fire positions are available and how may they be reached under cover? The weather and season also exercise an influence. Is the ground frozen or covered with snow? (It is very difficult to intrench in frozen ground.) What is the state of the crops? Standing crops afford excellent concealment.

Other conditions. Any other conditions of any kind, either favorable or unfavorable, which have a real bearing on his problem, should be considered by the leader.

Courses of action open. Plan. From this careful consideration of *what* he has to do, what there is to interfere with his doing it, and what aids he may expect, the platoon leader will evolve several possible schemes for carrying out his mission. These he carefully compares in his mind, weighing their relative advantages and disadvantages, and finally selects one of them as giving the greatest promise of success. This will be his plan of action.

The possible plans of action for an infantry platoon with a definite attack mission, are few in number. They depend on a few basic principles:

1. To attack means to move forward.
2. The immediate object of movement is to gain a position which permits the development of more effective fire.

The ultimate object of movement is to gain a position from which an assault may be launched against the enemy.

3. Unless his movements are masked by cover, darkness, fog, etc., the attacker must gain fire superiority before he is able to advance without ruinous losses. Fire superiority having been established, must be maintained throughout the forward movement.

A consideration of these principles will show that the plan of the platoon leader must provide for:

1. The use of available cover, combined with rapid and skilful movement, in gaining an initial position in which fire superiority may be established.
2. Progressive movement forward from one fire position to another, which either permits more effective fire or is an intermediate step in the advance to the assault position. For example: It is not always possible to move directly from one good fire position to a better. The attacker may be compelled to leave an excellent fire position where he is well covered, to advance to a more exposed and less favorable position to the front. Because the sole purpose of fire superiority is to make forward

movement possible. The attacker, having established fire superiority in any position, must take advantage of the opportunity thus afforded to continue his advance, even though this may temporarily place him in a less favorable position. Victory cannot be won by fire alone. Also the attacker seeks ultimately to gain a position from which he may launch his assault. Any intermediate position, however favorable for the delivery of fire, is merely a step in the progress toward the assault position.

3. Covering each forward movement by sufficient fire to maintain fire superiority. Except at very close range the weapons of the platoon cannot be effectively employed when in motion. Therefore it is necessary that portions of the platoon remain in the fire position to cover the forward movement of other portions. The extent of the fire superiority over the enemy will determine how large a proportion of the platoon may cease firing and advance. It may be a section, a squad, or only individuals, one by one. The movement may be a single rush from one position to the next, or a more deliberate individual movement, taking advantage of existing cover (infiltration).

4. As the most advantageous positions from which to deliver fire or launch an assault will usually be on a flank of the enemy's position, the plan should provide for placing elements of the platoon in such positions when practicable. Movements to such positions must take advantage of any cover afforded by the terrain, and of fire superiority established by other elements.

This typical procedure may of course be varied to some extent to meet emergencies which may arise.

The practicable plans for a platoon attack may usually be classed as three:

1. A continuous frontal advance, without halting for the purpose of delivering fire. Such a movement is possible when covered by a rolling barrage of artillery fire, or tanks, or when the natural cover is exceptionally good or the enemy's fire particularly weak and ineffective.

2. To immobilize the enemy, or pin him to his position, by a frontal attack, while employing the rear wave in maneuvers on one or (exceptionally) both flanks, with a view to gaining positions favorable for oblique or flanking fire or for assault. This will be the characteristic procedure in mobile warfare.

3. (When plan 2 is impracticable by reason of the terrain and the nature of the enemy's dispositions.) A frontal advance by alternate fire and movement, rushes of fractions of the line or infiltration of individuals, building up successive firing lines closer and closer to the enemy.

All of these three typical plans will ordinarily conclude with an assault or charge upon the enemy.

The platoon leader must decide, at the opening of the action, and at various times during its progress, what plan of action will best meet the situation which then confronts him.

Orders. Having determined upon his initial plan for launching the attack, and considered the various emergencies that may arise, the platoon leader issues a clear and definite, but brief verbal order to his platoon. Subsequent orders, during the progress of the combat will, as has been pointed out, be fragmentary—that is, issued from time to time to meet each new situation as it arises.

In his initial attack order the leader should give to his subordinates, usually to the entire platoon, if practicable, all information concerning the enemy and supporting troops which is necessary for their guidance. This order will conform to the usual five paragraph form, about as follows: (The paragraphs, of course, are not numbered in a verbal order.)

1. Information concerning the enemy and supporting troops.

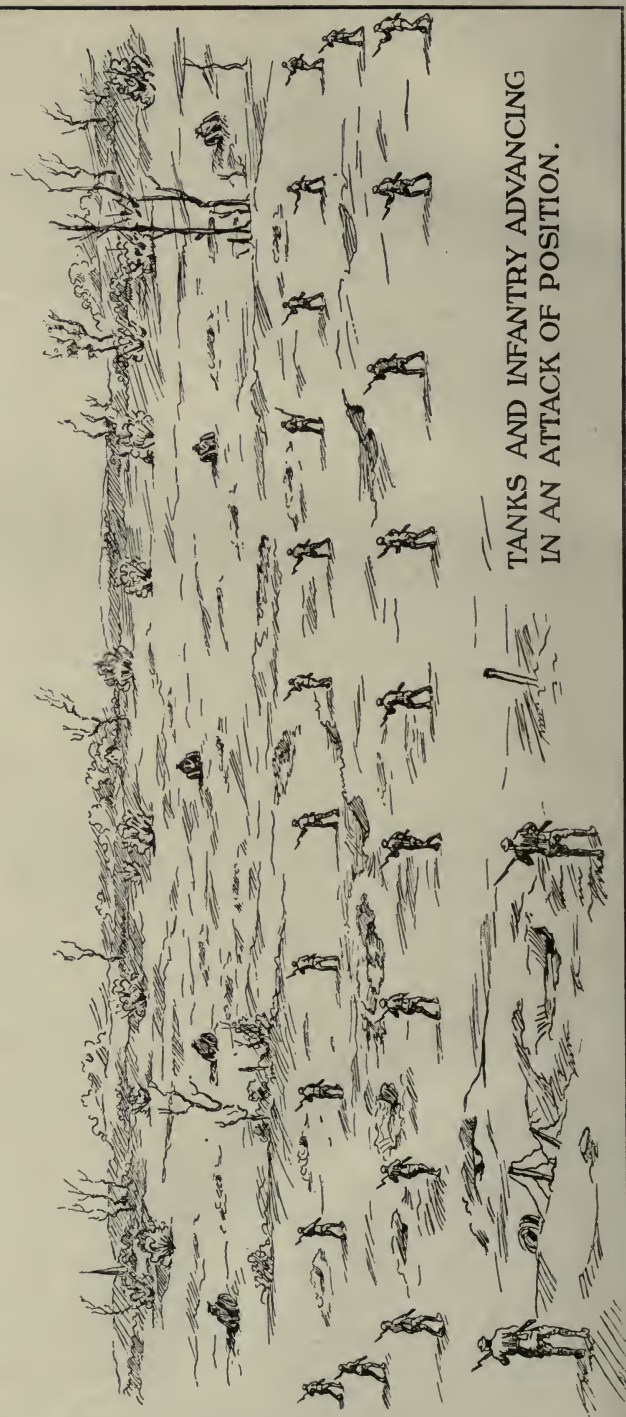
2. *a.* General plan of attack. Specifically the combat mission of the company.

b. Platoon plan of action, including its combat mission, time and direction of attack, line of departure, and zone of action.

3. *a.* Initial dispositions (deployment) of the platoon.

b. Special instructions to elements—if any.

4



TANKS AND INFANTRY ADVANCING
IN AN ATTACK OF POSITION.



4. a. Location of battalion aid station.
b. Instructions as to disposition of prisoners.
5. Place of the platoon leader.

Notes.

Practical Exercise 3, Offensive Combat, should be taken in connection with this lesson.

At this point in the course several periods of instruction should be devoted to a thorough review of the course in Musketry.

NINETEENTH LESSON.

CONDUCT OF THE ATTACK.

After the assault platoons of the rifle company enter the zone of effective small arms fire, the control or regulation of their actions by company or higher commanders is very limited. The base platoon, which has hitherto been the guide for the company's advance, loses its significance. Each platoon leader within his zone of action, fights his own platoon so as to best accomplish his mission. The battle becomes primarily a platoon leader's fight.

The mission of the platoon leader in this phase of the attack is to skilfully combine fire and movement, utilizing every advantage which the terrain affords, to reach the enemy's position, kill, capture or drive him from it, and to hold the ground gained.

Problems of the Platoon Leader.

In the achievement of this mission the leader, during the course of the combat, must solve certain problems. These will ordinarily include:

1. Maintaining the direction of attack.
 2. Reconnaissance.
 3. Locating the target and applying to it the fire of the platoon.
 4. Supervising and directing the fire and movement of the platoon.
 5. Providing for contact and intercommunication.
 6. Determining when, where and how to employ the support section.
 7. Determining when, where and how to assault the enemy's position. (In most cases the platoon leader will lead the assault in person.)
 8. Reorganizing the platoon promptly after the assault, in order to be ready to resume the advance, or to hold the ground gained.
 9. Security.
 10. Assisting neighboring units (on the flanks).
 11. Keeping the next superior commander advised of the situation of the platoon.
- In solving these problems the platoon leader will, as in all other cases, estimate each situation, formulate a plan of action, and issue the orders necessary to carry out this plan. In the combat operations of the platoon, situations arise suddenly and often unexpectedly. The leader must meet each emergency as it arises, with appropriate orders.

Maintaining the direction of attack. In his initial attack order the platoon leader defines the zone of action and gives the direction of attack to his subordinates. This he should visualize and make definite by reference to visible features of the terrain. If practicable a distant objective, or at least a distinctive direction point, well to the front, should be designated. This will enable elements of the platoon which may temporarily have left the zone of action to regain the proper direction.

The platoon leader, by means of his orders given from time to time, and by pointing out objectives and landmarks, maintains the correct general direction of advance. If necessary he may even halt and reorganize the platoon for this purpose.

The orders necessary to maintain direction will usually be the assigning of a definite point rather than a compass bearing, thus: "The 2nd squad (base squad) will move directly towards that farm."

Reconnaissance. The information derived from constant reconnaissance is the platoon leader's guide in every phase of the combat. This reconnaissance must be *personal*. In moving forward within the zone of small arms fire (as well as in the approach march) the leader should be at all times at the head of his platoon. Except when following a rolling barrage the platoon will usually be preceded by its scouts.

Conduct of the platoon scouts. The scouts move in front of the assault wave at such a distance (depending on the terrain) as to insure that the platoon will not walk blindly into an ambush, especially of hostile machine gun fire, which even at a considerable range can pin the platoon to the ground so that it can neither advance nor maneuver.

The scouts do not walk boldly forward in plain view. So far as consistent with their mission of continuous and aggressive reconnaissance, their movements should be screened from view of the enemy by a skilful combination of movement and the use of cover. This steady advance, affording the enemy only an occasional glimpse of their movements, will often induce him to open fire, and thus disclose his position.

There are two scouts to each squad, and they habitually work as a team. They should be "buddies," having friendship for and perfect confidence in each other.

The scouts pick out the localities where enemy groups are apt to be located, and utilize natural cover to conceal themselves as far as possible from view from such localities. The enemy will post snipers to pick off the scouts and officers. If their advance is not skilfully conducted the scouts will not only fail to accomplish their mission, but will lose their lives as well.

The scouts watch continually for signs of the enemy in these likely places. One scout watches the danger areas while the other moves forward. The platoon is not permitted to move into an open space until the localities from which fire might be directed upon such an area have been reconnoitered by the scouts.

The platoon leader follows his scouts and closely observes their conduct, watching for their signals. The actions of the scouts, the simple signals (halt, forward, and enemy in sight), and the use by them of tracer ammunition, will convey to the platoon leader most of the information they gather. When necessary one scout of a pair will carry a message back.

Locating the target and applying fire. If the enemy opens fire the scouts halt, take cover, and endeavor to locate the points from which the fire comes. They work their way forward to a favorable position for observation and open fire with tracer bullets, thus indicating the enemy's position.

The scouts of each squad, in taking a position favorable for the development of fire, will cover a front approximately equal to the deployed frontage of the squad. As the rest of the squad reaches the firing position the scouts point out to them the location of the target.

In order to apply fire to the target as promptly as possible the platoon leader must select the firing position and determine how to reach it.

If there be no scouts out and fire is suddenly opened on the platoon, the men drop to the ground, take cover, locate the target and open fire. A signal of the range, indication of the position of the target, and the signal to open fire, will usually be the only orders possible in this case. As a rule the section leaders and the men will know where the target is as well as the platoon leader—the enemy himself having indicated the position by opening fire.

When the scouts are in front and a situation develops, the platoon leader must decide whether he will occupy the position held by the scouts, or whether he will commence the fire action from a locality farther to the rear. The questions in this case are whether the position held by the scouts is a good initial fire position, and whether the leading section can probably reach it under cover of the terrain and the fire of the scouts. If the answer to either be no, it will be necessary to establish fire superiority from some position in rear before advancing.

If the line of the scouts is to be occupied the platoon leader might order the leader of the 1st (or leading) section: "On the line of scouts reform," indicating the

line. He may also give him the location of the target and the range, if these are known to him. As the scouts will be firing, the section will open fire upon arriving on the line, or in case they advance as individuals each will open fire on his arrival on the line, thus gradually building up covering fire for the remainder of the section. If the platoon leader has not designated the target this will be pointed out by the scouts as the section forms up abreast of them. If the section leader be not within speaking distance of the platoon leader, the latter's signal, "Forward," pointing to the line of scouts, will usually be sufficient. It may be possible for the platoon leader to call the section leader to him, and give him such orders as he deems necessary. These orders might be as follows: "On line of scouts reform, range, 600 yards (meaning from the fire position). Position outlined by tracers, extending from stone house to fence on right. Questions? Move out." The platoon leader may also cause a member of his headquarters (a runner) to outline the target with tracer bullets, to supplement the information furnished by the scouts.

Ordinarily the manner of moving forward to the position will be left to the judgment of the section leader. If the platoon leader considers it necessary to prescribe this he may order (or signal), "By squad (or section) rush, on line of scouts, reform," or "By infiltration, on line of scouts, reform."

If the position occupied by the scouts is not a good fire position for the section, or if the volume of the enemy's fire or the lack of cover indicates an improbability of the section being able to reach the position, the platoon leader must have fire opened over the heads of the scouts from the position occupied by the section, or one which it will be able to reach. The orders in this case would be similar to the foregoing, the position to be occupied being designated.

The scouts must be trained to take cover so as to permit fire over their heads without danger to themselves.

Supervision and direction of fire and movement. Having initiated the fire fight the platoon leader supervises the subsequent fire and movement of the platoon. To do this he occupies a position from which he can observe:

- a. The enemy.
- b. The leading section.
 1. To insure its correct application of fire.
 2. To regulate its movements.
- c. The rear section.
 1. To see that it occupies the best available cover at a proper distance in rear of the leading section, up to the time that it becomes necessary to employ it.

He moves his command post whenever necessary.

The leader should note the effects of the fire of both the enemy and his own command, and be able to sense when he has such fire superiority as to justify an advance.

The action having opened, the leading section should advance as rapidly as possible, without waiting for the organizations on its flanks. If the platoon leader believes that the section is able to move forward and the section leader does not move, he will order him to do so.

The order may be simply, "Forward," or it may direct the section leader where and how to move, as "To that ridge. Advance by squad rushes."

Employment of the support section. Another situation will be presented when it becomes apparent that the 1st section cannot advance, by reason of lack of fire superiority. This may be apparent at the outset or may develop at a later stage of the action. The problem presented to the platoon leader is to decide when, where and how he can best employ his support section to forward the movement of the platoon.

Having decided that it is necessary to employ the support section the leader will usually seek means for enveloping the enemy's position, as this will ordinarily be the most effective manner of employing the section. He studies the terrain to find a favorable position from which the section can apply its fire to the target to good advantage, usually from the flank or obliquely, and thus assist the leading section in gaining fire superiority and advancing. It is desirable also that this position be one

from which an assault is practicable, or from which an assault position may be reached. The platoon leader also decides upon the best covered route to the position selected. (See Plate 20.)

The orders to carry out the plan decided upon are best issued verbally to the section leader. For example: The platoon leader might dispatch a runner with this order: "To Sergeant A (leader of 2nd section) report to me here." The section leader having reported he orders:

"Enemy infantry fire from the farm and machine gun fire from the woods are holding up the advance of our 1st section. It will continue to fire from its present position. Lead the 2nd section up that draw (pointing), find a good position near the head of it, and attack the farm with fire. When A Co. (on the right) has put out the machine guns in the woods (pointing), we will advance on the farm. Questions? Move fast."

If it is not practicable to give the orders direct to the section leader they may be given to the platoon sergeant, who will ordinarily be with the platoon leader after the fire fight has opened. The platoon sergeant will then direct the operations of the 2nd section. He will not lead it in person. He will be able, however, to transmit and explain the order of the platoon leader better than a runner. If it be necessary to send a runner care should be taken that he thoroughly understands the message. The platoon leader will point out the localities he refers to, and will cause the runner to repeat the message. Unless he has great confidence in his runner it will be better to send a written message to the section leader. The manner in which the section carries out the instructions of the platoon leader will be a test of the training of the section and its leader.

It is not the proper function of the platoon leader to personally command a section during the fire fight. He is responsible for the leading of his entire platoon, and he does it by directing and supervising the operations of the two sections.

Upon receiving the foregoing orders the leader of the support section will ordinarily designate 4 to 6 scouts, under a leader, to precede the section and reconnoiter in the usual manner. The section leader will explain the maneuver to the senior scout, he will point out the position of the target and the other elements (if any) that are attacking it, he will tell the scouts whether the purpose of the movement is fire or immediate assault, and will indicate the general route to the position.

The orders of the section leader might take the following form: "Scouts and non-commissioned officers here. . . . The enemy in the farm and the woods yonder (pointing) are holding up our advance. The 1st section will continue to fire from its present position. We will move up that ravine, and attack the farm with fire, from the head of the ravine. Jones, take charge of the scouts and precede the advance. I will follow you at 40 yards (the movement is through a wood). Questions? Move out."

The senior scout forms his men as a patrol, with one in rear to transmit signals to the section leader. They move out, utilizing such cover as is available, and observing to front and flank to guard the section against surprise. Moving as far up the draw and as rapidly as is possible without being discovered from the farm, Jones selects a suitable fire position whose extent is equal to the deployed front of the section. Here the scouts lie down and wait for the section to join them. They do not open fire on the farm, as its position is quite plain, and it is desired that the fire of the section should come as a surprise to the enemy. Jones points out the position to the section leader as the latter arrives. The duty of the scouts is to cover the advance of the section, guarding it against surprise, to select the best available route, and to select and outline (by occupying) a position as close as possible to the enemy without being discovered by him.

The section, in section column, or squad columns, follows the scouts. The section leader orders each squad as it approaches the firing position: "Form on line of scouts. Fire at will." Or if he wishes to withhold his fire until the section is in line; "Commence firing at my signal." If the position is one for assault he would order; "Form on line of scouts. Prepare to assault."

Further Duties of the Platoon Leader.

Having committed both his sections to action the platoon leader is confronted during the continuance of the action, with the problems of reconnaissance, contact and intercommunication, supervision of fire and movement, security, and the assistance of his neighbors. He selects posts of command from which he can observe:

a. The enemy, both his own targets and other hostile elements.

b. His two sections:

1. To insure their correct application of fire.

2. To regulate their movements, if necessary.

c. The units on his flanks.

He changes his command post whenever it is necessary to meet these requirements.

He observes the effect of fire, both his own and that of the enemy, and judges when fire superiority is attained and maintained. He maintains contact with company headquarters.

In addition to personal reconnaissance the leader utilizes his runners as aids, especially in observation to the flanks, and of supporting troops in rear. The runners act also as messengers and connecting files. They should be able at all times to advise the leader as to the situation of the units they are detailed to observe.

The platoon leader should be equipped with field glasses of at least six power. With these he will ordinarily be able to study the terrain and the positions indicated by the scouts to a much greater advantage than is possible with the naked eye. He will be able to perceive details of the enemy's defensive organization, such as machine gun emplacements, trenches and obstacles.

By estimating the range and measuring the angular extent of a hostile position, its front in yards may be determined. Example: Range 600 yards, front 2 fingers or 100 mils ($1/20$ times range times $1/50$ times number of mils, equals frontage in yards; or $600/20$ times $100/50$ equals 60 yards).

From such calculations, from his study of the terrain and hostile defenses through his glasses, and from his knowledge of the enemy's organization, equipment and tactics, the platoon leader estimates the probable strength of the enemy, including the strength of his supports, and the probable difficulties in capturing the position. The nature and volume of the enemy's fire will be a further indication of his strength.

Whenever, in the platoon leader's judgment, there is an opportunity for forward movement, and his section leaders do not take advantage of it, he orders them to do so. He should be especially on the alert to take prompt advantage of the fire protection afforded by the accompanying weapons (machine guns, light mortars, one-pounders and 3-inch field pieces) whether this fire be directed at his own target, or some other element of the enemy which is firing on his platoon. By constant observation and attention he will often be able to foresee when this fire protection will be most effective, and can thus prepare in advance to take full advantage of what may be only a fleeting opportunity to move forward. For example, if he sees a light mortar adjusting its fire on a machine gun which is holding up his advance, he can judge when the shells will begin to fall on the target.

The Assault.

The platoon leader must decide when his attack has reached a position from which an assault on the enemy will probably be successful. This is the critical moment, the culmination of the fire attack, and the ability to sense when it has arrived will be a supreme test of the platoon leader's judgment. One or two automatic rifles in the hands of determined men have often checked an assault which had only 50 yards to cover. A number of considerations enter into the decision: The physical condition of his own troops, their position, the degree of fire superiority established, the nature of the terrain, the numerical strength of the enemy, the nature of his defenses, including obstacles.

If the platoon is in good physical condition (not exhausted), if it has greater strength and marked fire superiority over the enemy, and if the terrain, including the defensive works of the enemy, presents no serious obstacle to movement, the platoon

should be able to advance in a single swift rush over 50 to 100 yards distance, close with and overcome the enemy.

If the terrain does not permit of rapid movement, or if the assault must be launched from a position 100 to 200 yards distant from the enemy, it may be necessary to conduct it in a more deliberate manner, using marching fire of all weapons to cover the movement. In marching fire riflemen halt and fire *aimed shots* from the shoulder. Automatic riflemen fire *directed shots* covering the hostile position, their pieces supported at the hip by the slings passing over their shoulders. Rifle grenadiers may remain in position, firing over the heads of the advancing troops. If the platoon is well supported by fire of the accompanying weapons, or if the enemy is noticeably weakening, an assault thus delivered will often be successful, even from a distance of 200 to 250 yards.

Having decided that the moment for the assault is at hand the leader must decide whether to charge simultaneously with both sections or whether to assault with one section, covered by the fire of the other. Generally the former method (a simultaneous charge) will give the more decisive results.

If the assault is made by the entire platoon the leader should personally lead it. If it is made by one section only, circumstances such as the positions of the two platoons, or the leader's own position, will decide whether he shall lead the charge, or whether he can best control the assault by remaining with the other section to employ it in meeting any emergency that may arise.

All men fix bayonets. Just before the assault there should be a sudden burst of fire. The platoon leader signals, "Fire faster," thus increasing his volume of fire, and at the same time giving notice to his trained platoon that the assault is imminent. Selecting a position in which he can be seen by most of his men, and especially by his subordinate leaders, the platoon leader moves through the firing line, and by signal, order and personal example initiates the assault.

Reorganization.

The assault necessarily results in more or less confusion and disorganization in the attacking troops. At the conclusion of a successful charge which finds the platoon in possession of its immediate objective, it must be halted, unless there is a section still intact and ready to continue the advance.

Prompt counter attack on an enemy who has penetrated the position is the rule in an organized and active defense. The most favorable time for such an attack is while the enemy is still in the confusion resulting from the assault. Accordingly the prompt reorganization of his command is one of the most important as well as difficult duties of the leader of an assaulting platoon.

The platoon leader at once selects the localities where the sections are to reform. It is the duty of each section and squad leader to reassemble his own command.

The platoon leader takes steps to protect the reorganization and guard against counter attack by posting covering groups where they can prevent a counter attack, or at least give warning of and delay the enemy's advance. These groups should preferably consist of scouts and automatic riflemen, but often the leader must utilize the first men he can bring under control. A few automatic rifles with the covering groups will give them sufficient fire power to check any spontaneous advance of the enemy, or to break up anything less than an organized and determined attack.

As soon as a section has been reorganized the platoon leader moves it to the line of the covering groups, or disposes it in a temporary defensive position somewhat in rear, taking advantage of any facilities which the terrain affords, and providing for protection to the front and to both flanks. If the assault is made by a single section the other is promptly moved to a position where it can cover the reorganization, and if possible fire upon the retreating enemy.

Having thus provided for the security of his command, the platoon leader proceeds to check and verify the reorganization effected by his subordinates, as follows :

a. He checks the subordinate leaders. He sees that each section and each squad has a leader and a second in command.

b. He checks the reorganized squads. He sees that each squad includes all the elements necessary to a complete fighting unit. These include, besides a leader and second in command, at least one scout, an automatic rifleman, and a rifle grenadier. If by reason of casualties, any squad does not include all these elements, he breaks it up and assigns the men to vacant positions in other squads, which they are qualified to fill.

c. He checks equipment. He sees that each squad includes an automatic rifle and a grenade discharger. He sees that ammunition, including the ammunition of the dead and wounded, is properly distributed, and that automatic rifle magazines are refilled.

d. He checks the casualties, noting the number of men missing.

Having completed this inspection the platoon leader details a few of the men he can best spare (slightly wounded or exhausted), to conduct the prisoners to the rear. Usually two men will be sufficient. He makes report of the situation to his company commander; this report may be carried back by the senior man with the prisoners.

Having completed these duties the platoon leader prepares to continue the advance, or to consolidate and hold the ground won.

Security. The measures necessary for the security of the platoon during the fire fight are included in those already discussed. They consist essentially of proper formations, continuous reconnaissance, intercommunication and contact.

The platoon will ordinarily have little difficulty in defending its own front, except when temporarily disorganized after the assault.

The greater danger is of course to be apprehended from the flanks. These will usually be protected by neighboring units, so long as they are abreast of the platoon, and contact is maintained. If the platoon has pushed far ahead of its neighbors on either flank, or if contact has been lost, as in the case of a gap resulting from wrong direction of advance, or because of intervening features of the terrain, special measures must be adopted for security. So long as one section follows in rear of the other, it affords protection for the flanks of the leading section, for it can be quickly maneuvered to meet the attack. When both sections have been committed and contact with adjacent units has been lost, flank combat patrols of from two men to a squad, should be sent out. These afford security primarily by giving warning of any danger impending on the flank, thus allowing the platoon time to prepare to meet it. These patrols will also offer resistance to a hostile advance. If the patrol includes an automatic rifle a very effective resistance should be possible.

In addition to the measures under his own control the platoon leader may, in emergency, call for assistance. Company supports and battalion reserves are available to assist the assault platoons; the fire of accompanying weapons may be effectively employed to break up hostile counter attacks. To insure such support when needed the platoon leader must maintain means of communication to the rear.

Assisting neighboring units. The platoon will co-operate to assist the advance of neighboring units as far as practicable. Usually the greatest assistance a platoon can afford to its neighbors will be a rapid and continuous advance, which will keep the enemy within the platoon's own zone of action so busy that he will have little or no opportunity to fire on neighboring units. As the defense usually relies very largely upon cross and flanking fire, the fire resistance which opposes the advance of any platoon will often come from a position outside its own zone of action, and which it cannot itself attack. A rapid advance by any platoon also breaks down the resistances in neighboring zones of action by the threat against their flanks, or even sometimes against their rear.

The assistance rendered by an assault platoon to its neighbors will usually be limited to the foregoing, and it will seldom leave its zone of action for the purpose. However, in exceptional cases advantage may be taken of specially favorable

opportunities for attacks against the flanks of hostile positions in neighboring zones of action.

Reports to superior commander. An important duty of the leaders of smaller units, and one too often neglected, is to keep their superiors advised of their location and situation. In order to intelligently support their subordinates the higher commanders must be constantly advised as to what is going on. Personal reconnaissance by commanders becomes increasingly difficult as the size of the unit increases. In the case of a division, for example, only a few matters of special importance can receive the personal attention of the commander. Intelligence personnel of the battalion cannot know the situation of a platoon as well as the platoon leader himself. The latter should keep his company commander advised. The latter in turn advises his battalion commander. By this chain of information the division commander keeps in touch with the progress of his attack to the front.

Matters of special importance should be reported as soon as possible, which will usually be immediately. Less urgent matters will be reported from time to time, or at stated intervals, as daily.

The position of the unit, the number of casualties it has suffered, the nature of the enemy's resistance and the state of the ammunition supply, are matters in which the high command will be specially interested.

Notes.

Practical Exercise 4, Offensive Combat, should be taken in connection with this lesson.

Upon the completion of the subject of Offensive Combat, Practical Exercises 6 and 7, Offensive Combat, should be taken. The instructor should give his students as many additional similar exercises as necessary to insure a thorough practical grasp of this important subject.

When weather and local conditions permit a number of these exercises should be conducted on the terrain.

PRACTICAL EXERCISES.

OFFENSIVE COMBAT.

The following practical exercises, covering the operations of the rifle company and platoon in combat, should be studied in connection with or immediately following the preceding lesson which they illustrate.

The exercises should be conducted as sand table demonstrations by the instructor, troop dispositions and movements being indicated by pins, etc. (See Preparation and use of Sand Table.)

Throughout the exercise the instructor should call attention to the practical illustrations of the principles and methods discussed in preceding lessons. He should ask questions of the students in order to ascertain whether they have grasped the principles taught and are able to apply them. He should encourage questions by the students, and discussion, making certain that each principle is understood before proceeding to the next.

The instruction should be thorough. It will be better to cover only half of an exercise during a single period of instruction provided it is well understood, than to complete the exercise in a hurried manner.

Exercise 1. Illustrative Example. Rifle Company; Entry Into the Attack.

General situation. (See Plate 35.) Reds and Blues are at war. The territory shown on the map is Red.

The Blues, having completed their mobilization, are invading the Red territory. The Reds have assumed a defensive attitude to cover the mobilization of the remainder of their forces, which will not be completed for some days.

The Blues are about to launch a general attack on a wide front.

Special situation. Blue. The 1st Battalion, 1st Blue Infantry, in the first line of the regiment, is advancing in a zone of action 800 yards wide. The 6th Infantry is on its right, the 5th on its left.

Up to this point the battalion has met but slight resistance from small patrols. Reliable information indicates that the high ground south of B. M. 51 on the Red Bone Road, and the woods beyond, have been organized for defense, and are held by infantry and machine guns.

The regimental order has designated the Red Bone Road as the line of departure, and the direction of attack as S. 45° E. The zone of action of the battalion extends from the road junction about 500 yards west of B. M. 51, to the turn of the road about 300 yards east thereof.

In addition to its own machine guns, a 3-inch gun from the 1st Bn., 1st F. A., and the 1st Plat. of the regimental howitzer company, are attached to the battalion.

At this time the various elements of the battalion are disposed as follows: The battalion command post is on Hill 450; Co. A is on the north slope of the hill (in the edge of the woods just west of the road from B. M. 51); Co. B is in the wide ravine in the woods east of this road; Co. C is 200 yards in rear of Co. B; Co. D (machine guns), the howitzer platoon and the accompanying gun, in the order named, are on the road running northwest from B. M. 51, some hundreds of yards in rear of the battalion. The battalion halted in this position as the scouts of the assault platoons reached the Red Bone Road.

NOTE.—In the advance to this point the rifle companies of the battalion have been deployed in approach formation.

Orders of the battalion commander. The battalion commander orders that his staff and the commanders of all companies and attached units assemble on the north slope of Hill 450. While waiting their arrival he receives the following message from Bn. 2 (battalion intelligence officer), who has sent a patrol across the Red Bone Road, and into the wooded draw south of B. M. 51:



PLATE 35.

750 yards southeast of B. M. 51. Each company will cover a front of 300 yards, interval between companies, 200 yards.

To Bn. 2, 1st Bn., 1st Inf.

Time: 8.30 a. m.

Enemy located as shown in sketch. Estimate two machine guns and section of infantry in each position. Remain in observation.

Z, Sergt.

(Sketch on back.)

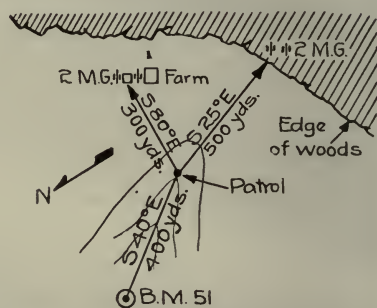


PLATE 36.

His subordinates, having assembled, the battalion commander, at 8.50 a. m., issues the following verbal order, pointing out the localities to which he refers:

(1) There is no change in the general situation.

The Reds hold the high ground in our front. Our patrols report machine guns at that farm, and in the edge of the woods beyond.

Our regiment attacks in conjunction with the 6th Inf. on the right and the 5th Inf. on the left.

(2) This battalion forms the assault echelon of the regiment, with the 2nd and 3rd battalions in reserve.

We will attack and capture the position in our front.

Time of attack, 10.00 a. m.

Direction of attack, S. 45° E.

Line of departure, the Red Bone Road.

Limits of battalion zone of action: West, road junction 500 yards west of B. M. 51; east, bend of road 300 yards east of B. M. 51.

(3) (a) Cos. A and B will form the assault echelon, Co. A on the right, Co. B, base company, on the left. The right of the base company will follow the line B. M. 51—Farm

(b) Co. C, in reserve, will follow the left assault company at 500 yards. It will furnish two flank combat groups of one squad each, to operate in the intervals on our flanks, abreast of the reserve company, and maintain contact with the battalions on our right and left.

(c) The attack will be supported by:

(1) One 3-inch gun, initial position on this hill (450).

(2) The battalion machine gun company, initial position on this hill.

(3) Light mortar and 1-pounder platoon, initial position near B. M. 51.

(4) (a) The initial position of the battalion aid station will be in the ravine 200 yards northwest of B. M. 51.

(b) The trains (less ammunition wagons) will assemble in the woods just off the road leading northwest from B. M. 51, and 1500 yards from that point.

(c) The ammunition wagons will assemble in the woods, just off the road, 250 yards northwest of B. M. 51.

(d) Prisoners will be sent to the battalion command post. Bn. 2 will have charge of the further evacuation of prisoners.

(5) Battalion message center here. (Hill 450.)

Battalion command post in rear of the right assault company.

NOTE.—As the battalion commander's order is given verbally the paragraphs are not numbered and lettered. The numbers and letters given indicate the sequence of paragraphs, and also the form of the order as it would subsequently be written for the operations files of the battalion.

Actions of company commander. Captain B, commanding Co. B, listened to the order of the battalion commander, made necessary notes thereon, and asked necessary questions. He sent a runner to his 1st sergeant with the following message:

"To 1st Sgt. Have platoon leaders and platoon sergeants assemble at company command post at 9.15 a. m."

NOTE.—The 1st sergeants and company agents of communication remain in edge of woods due north of B. M. 51.

Captain B left the battalion command post at 9.05 a. m. Hill 450 afforded a good observation post, and from here, with the aid of his map and field glasses, Captain B identified on the ground the localities referred to in the battalion commander's order. He located B. M. 51, the farm to the southeast, the woods beyond. He determined the limits of his zone of action and noted the wooded draw on the right thereof, and the smaller draw just south of the Red Bone Road. He perceived that, after leaving the latter, his troops must cross some 600 yards of open terrain, and that fire from the farm and the woods beyond could cover this entire area.

Company commander's estimate of situation. During these observations and while returning to his company, Captain B estimated the situation confronting him, considering the effect that the terrain and the information concerning the enemy in his front would have upon his conduct of the attack. His thoughts were about as follows:

1. *My mission* is to attack the enemy in my zone of action, to reach his position and capture or expel him. In particular I must capture the farm, as it is in my zone of action.

2. *The enemy.* Information indicates that he holds the farm and the edge of the woods beyond. He has machine guns at the farm and at least one point in the edge of the woods. It is a fair presumption that there are other machine guns in the edge of the woods. There is no evidence of any extensive intrenchments or obstacles. The enemy's fire on the open, flat terrain should be very effective, but he is apparently not organized for close defense.

3. *My own troops.* Our battalion has two companies in the assault echelon. The 2nd and 3rd battalions are in reserve. This will make a strong attack with great penetrative power. Also the assault companies will be well supported by accompanying 3-inch gun, machine guns, one-pounders and light mortars. The front assigned to my company is 300 yards, with an interval of 200 yards on the right,

and probably at least as much on the left. My company is now in its zone of action, and my scouts are on the line of departure. I have only 300 yards to move to reach this line.

4. *The terrain.* My troops will be exposed to fire while crossing the road, but in the draw just beyond they will have cover. The wooded draw on the right of my zone of action will afford good cover for maneuver. There is no similar cover on my other flank. Accordingly, my supports had best be held on my right, as that is where they will probably be used in the attack on the farm. My direction line, from B. M. 51 to the larger farm building is quite plain.

5. *Plans.* As the width of my zone of action is 300 yards it is too great for one platoon, but about right for two. So I will place two platoons in the assault echelon. This will leave one in support. I will use it on the right, as it is most apt to be needed here and the terrain is also most favorable for its use. I will send it up the wooded draw on my right. The right platoon must assault the farm. I will use the left platoon and the support to assist if necessary. It will be very difficult to advance over the open ground in my own zone of action until the enemy machine guns are knocked out. Probably the accompanying weapons will fire on the farm and the edge of the woods. If they do not, I will ask for such fire. I cannot stop with the capture of the farm. It is very exposed and a bad place to try to reorganize while the enemy holds the edge of the woods beyond. So I must run over the farm and assault the edge of the woods. When I have captured these I will have a better place to reorganize before pushing on. I have no information as to the situation in the woods or in the open terrain beyond, so for the present my plans can go no further than the capture of the near edge of the woods. When I have captured this I will reconnoiter the country beyond and make further plans.

Captain B decides that he cannot, in his initial order, give all his plans as outlined. Just how he will capture the farm and the edge of the woods he cannot tell in advance. His initial order to his company will designate the platoons for the assault and support echelons. He will assign a zone of action and a direction of advance to each assault platoon. He will send his support platoon up the draw, where he can use it as the situation requires. As there will be no barrage he will order his platoons to cover their movement by scouts. He will make other necessary provisions for contact and security by sending out flanking groups from his support platoons.

Orders of the company commander. Captain B returns to his own command post (in the edge of the woods due north of B. M. 51), arriving at 9.20. Here he finds assembled his headquarters, his three platoon leaders and their platoon sergeants.

Captain B issues the following verbal attack order to his assembled subordinates:

1. The Reds hold the high ground in our front and the edge of the woods beyond, with infantry and machine guns. Machine guns have been located at the farm 1000 yards SE. of here (pointing it out) and in the woods about 200 yards to the right rear of the farm. This road on our front is the Red Bone Road, that junction where the country road comes in (pointing) is B. M. 51. Our battalion forms the assault echelon of the regiment, with the 5th Infantry on the left. The machine gun company, a platoon of the howitzer company, and a 3-inch gun, will support the battalion in the attack.

The Red Bone Road is the line of departure. Our battalion covers a zone of action of about 800 yards extending from a road junction just beyond that hill (pointing to Hill 450) to that bend in the road. There will be two companies in the assault echelon.

2. This company attacks as the left assault and the base company of the battalion. Direction of attack, S. 45° E. Scouts of the assault platoons will cross the Red Bone Road at 10.00 a. m.

3. The first platoon will be the right assault and base platoon. Its right will cross the Red Bone Road at B. M. 51, and will follow the line B. M. 51—farm 750 yards southeast (pointing). The second platoon will be the left assault platoon. Each platoon will cover a front of 150 yards.

The 3rd platoon, in support, will follow to the right rear of the 1st platoon at 200 yards, using the cover of the wooded draw on our right. It will send out flanking groups of four men each to maintain contact with the units on our right and left.

The assault platoons will be preceded by scouts at about 200 yards.

4. The battalion aid station will be 200 yards north of B. M. 51. Prisoners will be sent to company command post.

5. I will follow the right of the assault echelon.

I will give the signal "forward" from here. It is now 9.26. Are there any questions? . . . Posts.

Comments. Captain B's orders at this time are only such as required to properly launch his company into the attack.

He has given his subordinates all the information they actually need. He has told them what he knows as to the enemy in their front. He has told them what supports and reserves are immediately available to assist them, and what troops are on their flanks. He has given them the information as to the supporting weapons in order that they may be ready to take advantage of their fire or to indicate to Captain B where and when it is needed. He does not tell them where these weapons will be. If they need such help, they will apply to him. He has given each platoon its part in the attack, its zone of action and direction of advance.

He has designated the line of departure and time of attack, and he will also signal the advance. Although his command will not advance until he signals, they should know the time of attack in order that they may know how long they have to prepare, and that they may be ready on time. The platoon leaders must estimate the situation and issue their own orders, and time must be allowed for this.

Captain B designates a base platoon in order to regulate the movement up to the time of actual opening of the fire fight. Thereafter this designation will cease to have any significance.

Captain B designates the position of the battalion aid station in order that the men may know where to go in case they are slightly wounded and able to walk.

He gives orders as to where prisoners will be sent by platoon commanders. The further disposition of the prisoners does not concern them.

He gives no orders with reference to supply during the attack. It is Captain B's responsibility to see that his command is supplied with the ammunition, food and water that it needs. But his platoon leaders are not in any way responsible for the service of supply and have no duties in connection therewith during combat, except to make sure they do not run out of any supplies, by informing the company commander in ample time when anything is needed.

The attack plan of the company commander must be direct, positive and simple. His orders must be clear and definite and as brief as clearness permits. They must not look too far into the future, nor attempt to provide for every possible emergency. They must include everything that his subordinates should know, and must omit anything that does not actually influence their conduct, however interesting and important it may be to himself and his superiors. The orders must take account of available time. Subordinates must be given time and opportunity to ask questions, to make their own estimates of the situation, issue their orders and complete their preliminary dispositions.

To properly estimate the situation, to make a simple and effective plan, and to issue clear orders launching his company into the combat in such fashion as to give it the best possible chance of success, is the most important function of the commander in this phase of the attack.

Exercise 2. Illustrative Example. Rifle Company; Conduct of the Attack.

Continuation of the operations of Co. B, 1st Bn., 1st Inf., from Exercise 1. (See Plate 35.) Capt. B's platoon leaders have issued their initial attack orders, based on the order of the captain, and have completed their dispositions for launching the attack.

At 10 o'clock Capt. B signals, "Forward." He then follows the right assault platoon. As the 1st section of this platoon crosses the road, machine gun and rifle fire open from the front. The 2nd section, near which Capt. B is moving, halts and lies down on the reverse slope.

Capt. B moves up the slope and takes post near the road, about 50 yards east of B. M. 51.

He can here see the farm and the woods in rear for several hundred yards on either side of the farm. He can see both his assault platoons building up firing lines on the far edge of the shallow draw across the road.

The 1st sergeant and two company runners are near B. M. 51, observing battalion headquarters, which is still on Hill 450.

The machine gun corporal is with Capt. B, observing the enemy. One of the machine gun runners (agents) is near B. M. 51, observing the machine gun platoon command post on Hill 450; the other is 10 yards in rear of the corporal.

The 1st platoon runner is 25 yards on Capt. B's right, observing Lieut. B, 1st platoon leader. The 2nd platoon runner is 25 yards on the captain's left, observing Lieut. C, 2nd platoon leader. The 3rd platoon runner is 25 yards behind Capt. B, observing Lieut. D, leader of the support platoon.

One bugler is 40 yards east of Capt. B, along the road, observing the four men sent out by the 3rd platoon, who have taken position on a little nose 200 yards east of B. M. 51, and are observing the 5th Infantry (on the left).

One bugler has crossed the road a little west of B. M. 51, and is watching Co. A moving through the woods on the right. He is close enough to the 1st sergeant to talk to him.

A corporal and three men of the battalion intelligence platoon move into the company zone of action. The corporal reports to Capt. B, "I command a patrol of three men, intelligence platoon. I am ordered to follow the right assault platoon, observe Co. B and the 5th Infantry, and assist in evacuating prisoners." The corporal establishes his observation post about 100 yards east of Capt. B's present position.

Capt. B observes both his platoons build up a firing line of their first sections on the far edge of the draw. The 2nd section of both platoons filter into the draw and lie there in support.

Capt. B studies the enemy. He sees that fire is coming from the farm and the edge of the woods on both flanks of the farm.

Apparently the farm is organized, with machine guns in the woods covering the flat ground around it with bands of fire (flankments).

At 10.30 Capt. B observes the support section of the 1st platoon move up the wooded draw on the right. The light mortar section crosses the road and goes into position directly south of B. M. 51.

At 10.35 a runner from Co. A reports to Capt. B.

"From Capt. F—written message."

The message is as follows:

Co. A, at edge of woods 400 yards
S. of B. M. 51. 12 June 21.
10.25 a. m.

To C. O. Co. B. (By runner.)

M. G. fire from farm in your front holding up my advance. Have requested artillery and mortar assistance. Request you silence guns.

F, Capt.

As he finishes reading this message Capt. B observes a 3-inch gun adjust on edge of woods in Co. A's front and smother a machine gun position from which fire was coming. The machine guns cease firing, open again, and receiving more 3-inch fire, cease altogether.

Company commander's estimate of situation. Capt. B now rapidly estimates the situation confronting him about as follows:

Mission. My general mission is to attack, to advance in my zone of action. My immediate mission is to capture the farm. As it will not be safe at the farm until

the edge of the woods beyond are captured, I must push on and seize the edge of the woods.

Enemy. The enemy has both machine guns and infantry in the farm, and machine gun fire has been coming from the edge of the woods beyond. Our 3-inch gun has put out one or two machine guns, but there are others.

My own troops. My own company is now in a good position, but it must advance over open ground to the front which is swept by machine gun fire from the woods and rifle fire from the farm. The field of fire of the enemy is very good, and my company is apt to suffer severely if it attempts to advance before the machine guns are silenced. Also the farm is organized, the riflemen there have cover and a good field of fire, and if my company advances it will probably also receive machine gun fire from the farm, since the company on my right reports that there are machine guns in the farm.

Terrain. (As already noted. The terrain in Capt. B's front is flat and open and affords a good field of fire for the enemy.)

Plan of action. I will request fire of the accompanying weapons on the machine guns in the edge of the woods, and on the farm. Under cover of this fire my assault platoons should be able to advance. The machine guns in the woods are not visible, though the general location of some of them has been indicated by the scouts' tracers. The accompanying guns can best attend to these. Light mortar fire will be best for the farm, as the troops can advance under it.

Capt. B. moves to B. M. 51, and takes the bearings of the machine gun position in the edge of the woods, as indicated by his own observations and the tracers of his scouts. He makes a little sketch giving this information. (See Scouting and Patrolling.) He calls a runner to him and says: "Do you see that machine gun position in the edge of the woods? (he points it out). Take this message to the battalion command post, and point out the position of the machine gun to the battalion commander." He writes the following message on the back of the sketch and hands it to the runner:

Co. B, B. M. 51,
12 June 21, 10.40 a. m.

To C. O. 1st Bn. (By runner.)

Request artillery fire on M. G. holding up my advance. See sketch on back.
Request light mortar fire on farm.

B, Capt.

He calls a second company runner to him, and says: "S, to light mortar section, in that draw. Do you see the place? Have requested light mortar fire on farm. Infantry is going to attack." The runner repeats the message and departs.

Capt. B sends this message direct. His message to the battalion will take some time to reach the guns. Undoubtedly the battalion commander will send his runner on to the accompanying guns. Hence Capt. B is supplying the necessary team work by giving the necessary information direct to the light mortar section, with which he has easy communication.

Capt. B observes the enemy, he presently sees a mortar bomb fall beyond the barn, then one short, then one on the barn. He sees a 3-inch shell hit the farm house. He sees the gun shift its fire and adjust on edge of woods to left rear of farm.

Capt. B, observing his platoons, notes both sections of 1st platoon advancing by squad rushes.

The 2nd platoon has not moved—its 1st section is still firing on the farm, its 2nd section remaining in draw.

His support platoon has now crossed the road and is in the woods southeast of B. M. 51.

Capt. B makes a rapid estimate of the situation.

Mission. To take the farm and edge of woods beyond.

Enemy. Infantry and machine guns in farm and machine guns in woods.

Own troops. Aided by light mortar and 3-inch fire, 1st platoon is closing on farm. Co. A will take care of machine guns in their front.

Terrain. Wooded draw on right of company affords good cover for my support platoon to advance closer to farm.

Plan of action. 1st platoon attack farm, 2nd platoon machine guns in woods, 3rd platoon move to head of draw on right in close support of 1st platoon attack on farm. I move to far edge of draw in front to better control support and observe attack on farm.

The leader of a section from the reserve company of the battalion reports to Capt. B just before he moves, "My section, each man with 600 rounds of ammunition in bandoliers, is in the edge of those woods. I am ordered to report to B Co. with this ammunition."

Capt. B orders the section leader: "The 3rd platoon B Co. is in that draw (pointing). Move your section into the draw. Report to Lieut. D commanding the 3rd platoon. Questions? Move out."

Capt. B now issues the following orders, in accordance with his plan:

"M (2nd plat. runner) to Lieut. C (2nd plat. leader). Attack machine guns in woods southeast of farm. Push on while 3-inch gun is firing."

"N, (3rd plat. runner) take this message to Lieut. D (3rd plat. leader)." The message is as follows:

Co. B,
10.55 a. m.

To 3rd Plat. (By runner.)

Move your platoon to edge of woods at head of draw on right of company zone of action. Be ready to fire on woods in rear of farm to support attack of 1st platoon. Have section from reserve with ammunition follow you.

B, Capt.

Comments. In this example is illustrated the manner in which the company commander of an assault company solves the following problems incident to the command of his unit in the attack:

1. Reconnaissance.
2. Intercommunication and transmission of orders.
3. Supervising the conduct of the assault platoons.
4. Employment of supports.
5. Determining need for and requesting fire support of accompanying weapons.
6. Security.
7. Ammunition supply.

Exercise 3. Illustrative Example. Rifle Platoon; Entry Into the Attack.

Continuation of the operations of Co. B, 1st Bn., 1st Blue Infantry, illustrating the operations of the 1st platoon, Co. B. (See Plate 35.) Lieut. A, leader of the 1st platoon of Co. B, listens to the attack orders of his company commander and takes full notes of same. He then orders his platoon sergeant, who is with him: "Return to the platoon and assemble the non-commissioned officers. I will join you in ten minutes or so."

Lieut. A moves down the side of the unimproved road to a point where he can see the terrain over which the attack is to be launched. He studies the ground, comparing it with his map; notes the road junction (B. M. 51), the farm 700 yards southeast, the line of woods beyond the farm. He notes the level, open ground between himself and the woods, where he will be greatly exposed to fire from the farm. He perceives that the small draw just south of and parallel to the Red Bone Road affords the last available cover between him and the enemy. The crest of the rise out of this draw to the high ground to the south is about 450 yards from the farm. Lieut. A sees that it affords a favorable fire position. He also notes the large draw parallel to and on the right of his line of advance. This will afford a covered approach to a position on the flank of the farm.

Platoon leader's estimate of the situation. While returning to his platoon Lieut. A completes his estimate of the situation.

The *mission* of the platoon is to attack on a front of 150 yds., direction S. 45° E., left of zone of action, the line B. M. 51—farm.

The *enemy* holds the farm and in all probability the edge of the woods in rear. He is known to have machine guns, whose fire over the open and level ground will be very effective. Lieut. A sees no signs of field fortifications.

The *2nd platoon* will be on Lieut. A's left, the 3rd platoon in support in his rear, Co. A on his right. His own platoon is now approximately in its zone of action. His 2nd squad (on his right) will move on the line B. M. 51—farm.

The enemy in the farm will be an excellent target for the accompanying gun, light mortar and one-pounder, and Lieut. A may expect support from them. The machine guns from Hill 450 will be able to fire on the edge of the woods beyond the farmhouse, over the heads of the attacking troops.

As there is a 200-yard interval between his platoon and Co. A on the right, Lieut. A will have room to maneuver his rear section up the large draw on the right of his zone of action, in case his frontal attack is held up by fire from the farm or woods, as is apt to be the case.

Lieut. A's *plan of action* is to advance, with his 1st section in line of skirmishers at 5-yard intervals, preceded at 200 yards by the scouts, followed at 150 yards by the 2nd section in line of squad columns. The 2nd squad, base, will cross the Red Bone Road at B. M. 51 advancing on a line with the right building of the farm. If fired on from the farm he plans to gain the top of the rise, about 450 yards from the farm, and establish his first fire position there.

Orders of the platoon leader. Lieut. A returns to his platoon, and finding his non-commissioned officers assembled, he issues the following orders:

1. The enemy holds that farm about 1000 yards to our front, and the woods beyond. Machine guns and infantry have been located in the farm and the edge of the woods (pointing).

Our company attacks as the left assault company of the battalion. Co. A is on our right, our 2nd platoon on our left, our 3rd platoon follows us, in support.

Our attack will be supported by a 3-inch gun, light mortars and one-pounders, and the machine gun company of the battalion.

2. This platoon is the right assault and base platoon of the company. We attack on a front of 150 yards. The 2nd squad, base, will cross the Red Bone Road where the unimproved road (pointing) enters. The road junction is B. M. 51. Direction of advance, the line from B. M. 51 to the right hand building of the farm.

3. The 1st section will advance in line of skirmishers, preceded at 200 yards by its scouts. The 2nd section, in line of squad columns, will follow the first at 150 yards.

4. Battalion aid station, 200 yards north of B. M. 51.

5. I will be at the head of the 1st section. It is now 9.50. Be ready to move at 10. Are there any questions? Posts.

Comments. Lieut. A's initial order is practically limited to information and preliminary dispositions. It does not provide for the future. Lieut. A will control his platoon by means of orders, and will meet the needs of the situation as they arise.

Exercise 4. Illustrative Example. Rifle Platoon; Conduct of the Attack.

Continuation of the operations of the 1st platoon, Co. B, 1st Bn., 1st Infantry, from Exercise 3. (See Plate 35.) Lieut. A's initial attack order is given in the 3rd exercise. Having issued this order Lieut. A awaits the signal of his company commander to advance.

As soon as the signal is received Lieut. A signals to the scouts of the 1st section, "Forward." The scouts are in pairs at 50 to 75 yard intervals, one of each pair echeloned in rear of the other at about 10 yards distance.

Lieut. A moves out about 100 yards in rear of the center pair of scouts (Black and White). He has three runners with him (one runner has been sent to Capt. B).

Two of the runners move about 25 yards in front of Lieut. A and 40 yards to either flank, each observing towards his outer flank. The third runner is 25 yards in rear, observing to the rear.

As Lieut. A crosses the Red Bone Road his scouts are moving up out of the draw in his front. He moves into the draw and watches them advance to the edge of the plateau beyond.

The 1st section, deployed as skirmishers, moves out when the scouts are about 200 yards ahead. As it crosses the road, hostile machine gun fire opens from the woods to the right front, and rifle fire from the direction of the farm. The section rushes to the bottom of the draw and there halts under cover.

The scouts, from the edge of the plateau, are now firing tracer bullets at the farm. The left pair are firing at a point in the edge of the woods from which machine gun fire is coming.

Lieut. A moves forward until he can see the farm, and studies it through his field glasses. It is about 500 yards from the line of the scouts, but cannot be seen by the leading section in the draw.

Lieut. A decides to build up on the line of scouts and attack the farm. He rises to his knees, turns to the section and signals, "Forward," pointing to the line of scouts. The section leader repeats back the signal, whereby Lieut. A knows it is understood.

The platoon leader moves to a position on the right, about 40 yards behind the rear scout of the right pair. Here he can see:

1. The farm, his target.
2. The woods in rear, to the right and left, from which machine gun fire is coming.
3. His firing line, the 1st section.
4. The draw, to which his 2nd section will presently advance.
5. The terrain to his flanks.

From this position Lieut. A notes the enemy's fire increase in volume. He sees the platoon on his left engage the farm and the machine guns in its right rear, whose position has been indicated by the tracers of his scouts. He sees his own 1st section build up the line of scouts. The automatic riflemen move forward first, followed in order by their substitutes, the squad leaders and the section leader, the No. 4 of the rear rank (2nd in command of the squads), the section guide being the last to go. He sees his rear section cross the road by rushes of two to four men, and advance into the draw. The platoon sergeant joins Lieut. A.

Platoon leader's estimate of the situation. Lieut. A continues to observe the enemy and to note his fire effect. He sees two or three casualties in his 1st section. He estimates the situation as follows:

Mission. Lieut. A's general mission is to attack, to move forward, to keep abreast at least of the units on his flanks. From his consideration of the situation as to the enemy and his own troops, Lieut. A decides that his immediate mission, or the first task he has to accomplish, is the capture of the farm.

Enemy. The rifle fire from the farm appears to be growing stronger. The enemy machine guns on both flanks of the farm continue to fire, but there is no marked increase in the volume.

His own troops. Lieut. A's 1st section is in a fairly good fire position, and his 2nd section is fully covered. The 1st section, however, would probably suffer heavily in an advance across the open space between their position and the farm, unless they are supported by fire of accompanying weapons, or an attack on the flank of the farm by some other unit. The farm is in Lieut. A's zone of action, and it is his mission to capture it. He cannot expect the units on his right or left to leave their zones of action for that purpose. They will rely upon him. The tracers of Lieut. A's scouts have indicated that the farm is occupied by the enemy, and have also pointed out the position of the hostile machine guns that are firing on his platoon. Lieut. A believes that the fire of the accompanying weapons will

soon be directed against the enemy in his front. The farm is a good target for the light mortar, and the machine guns in the edge of the woods for the one-pounder. Both are good targets for the accompanying 3-inch gun. The platoons on both flanks are in action, and will probably soon attack the machine guns in the woods, which are in their zones, but in an advance they are apt to suffer heavily from fire from the farm, unless the enemy troops therein are fully occupied in meeting the attack of Lieut. A's platoon.

Terrain. Lieut. A notes that the terrain in front of his 1st section is unfavorable for an unsupported frontal advance against the farm. It offers too good a field of fire for the enemy in the farm and the machine guns nearby. Lieut. A notes that there is a wooded draw on his right which affords a favorable avenue of approach to the flank of the farm. It is out of his zone of action. But there is a large "maneuver interval" on his right, between his own command and the left platoon of the next company, and there is no reason why Lieut. A may not use this interval.

Plan of action. Lieut. A decides to send his 2nd section up the draw to a fire position on the flank of the farm. With the fire of two sections he hopes to gain fire superiority over the enemy in the farm, and when the units on his flanks or the accompanying weapons have put out the machine guns, or reduced the effect of their fire he will be able to assault the farm.

Orders of the platoon leader. Lieut. A calls the platoon sergeant to him and orders: "The fire from the farm and the machine guns is too strong for us to attempt a frontal advance. The 1st section will continue to fire from its present position. Order the 2nd section to move up that wooded draw on our right to a fire position on the left front of the farm, and open fire. As soon as other troops or the accompanying weapons have put out the machine guns we will assault the farm. I will remain here. Any questions?"

Progress of the attack. The platoon sergeant goes to the leader of the 2nd section, explains the situation and transmits Lieut. A's order. He accompanies the 2nd section into and up the draw until he is nearly opposite the platoon leader. Here he leaves the section, moves to the edge of the woods and takes position behind a tree, about 50 yards to the right of the platoon leader. Here he can see and talk to the leader, see the farm and watch the progress of the 2nd section up the draw, and see the position it will take.

Lieut. A also sees the 2nd section move up the draw to a fire position near the head of same, and open fire on the farm. He sees the platoon sergeant take post as described. He continues to note the fire effect of the enemy and the fire of his own two sections. He sees that his section leaders are correctly applying their fire to the target.

Support of accompanying weapons. Presently Lieut. A sees a 3-inch shell burst at the edge of the woods near the location of one of the hostile machine guns. It is promptly followed by other shells. He sees a light mortar bomb fall beyond the farm, and another short of it. The enemy machine gun fire from the woods presently ceases.

The greatest obstacle to Lieut. A's advance on the farm (the machine gun fire) is now removed. The light mortar is adjusting on the farm. Its next shot will probably be a hit. Because of its curved trajectory Lieut. A's troops can easily advance close to the farm while the mortar is firing. The best time to advance is while the farm is subject to this fire. Ammunition supply of the light mortar is difficult. Lieut. A knows it cannot afford to expend many shells on his target. He must take advantage of this valuable fire assistance at its best.

Lieut. A decides to advance his 1st section under cover of the fire of the light mortar and of the 2nd section, as soon as the first bomb actually hits the farm.

The next bomb lands squarely upon the larger building of the farm. Lieut. A signals to his 1st section, "Section rush." He selects a covered position for himself about 50 yards to the front, and moves to it as the section rushes.

NOTE.—The rush of the section and the light mortar bomb distract attention from Lieut. A's own movement. The snipers of the defense are ever on the alert to pick off the leaders of the attack, and thus deprive it of its directing force. These leaders must be careful not to expose themselves unnecessarily.

The movement is entirely successful. Another bomb falls on the farm. The leader of the 2nd section, without orders, rushes his right squad forward 50 yards. Lieut. A notes that the fire from the farm has visibly slackened. He signals to his 1st section, "Squad rush," pointing to the left. Two squads are now advancing at a time, one in each section, but so far apart that it is difficult for the enemy to concentrate fire on both of them. Lieut. A notes that the squad rushes do not result in the enemy gaining fire superiority over him. Two 3-inch shells land at the farm, one of them striking the house and setting it afire. This fire is coming over the heads of the 2nd section at rather short range. Lieut. A believes the situation warrants a section rush, and that because of the fire of the 3-inch gun the 1st section can rush to better advantage than the 2nd. Also it is much farther from the position, and Lieut. A wishes to have his entire platoon close to the farm before he assaults it.

He signals to the 1st section: "Section rush." The section rushes to about 300 yards from the farm. The 3-inch gun shifts its fire again to the woods. Two more light mortar bombs land on the farm. Both buildings are now burning. The hostile fire is very weak.

The assault. The 1st section continues to rush until about 150 yards from the farm. The 2nd section is firing upon it at close range. Lieut. A sees men running from the farm to the woods in rear. He springs up, moves past the right of the 1st section, signals, "Forward" to both sections, and orders, "Marching fire." This order is heard by the men nearest him, and is passed down the line. Each section leader rushes through his section ordering, "Forward."

The entire platoon advances on the farm, the men occasionally halting and firing on the retreating Reds. The automatic riflemen fire from the hip.

Reorganization. Arriving at the farm Lieut. A orders the platoon sergeant, who has joined him: "Remain here, hold the 2nd section and reorganize it. I am going on to the woods." He leads the 1st section to the edge of the woods beyond the farm, where he orders: "Halt."

The platoon leader, just inside the edge of the woods, finds the leader of the 1st section and orders: "Reorganize your section here." He collects the first six men he can get (preferably scouts and automatic riflemen), and leads them about 20 yards into the woods. He orders: "Moore (automatic rifleman), move 10 yards to my right; Adams (automatic rifleman), move 10 yards to my left. Observe to the front. Fire on any Reds seen. Jones and Greer (scouts), move 25 yards to the right of Moore, observe to the right and front. Fire on any Reds seen. Gray and Graves (scouts), move 25 yards to the left of Adams, observe to the left and front. Fire on any Reds seen."

Lieut. A now inspects his 1st section. He checks the leaders and finds that the section guide was killed during the assault. The section leader has replaced him with the corporal of the 2nd squad. He checks the 1st squad and finds that the automatic rifleman has been killed, and replaced by his substitute. Lieut. A looks to see that the latter has the weapon and full equipment. The two scouts are on outpost. The 2nd squad has suffered several casualties, and the section leader has broken it up. No. 3 front rank is assigned to the 1st squad, which needs a substitute automatic rifleman. The automatic rifleman is on outpost. The corporal is now section guide. In the 3rd squad Nos. 4 rear rank and 2 front rank, the automatic rifleman and both scouts are missing. The section leader says that two of the men are probably with the second section. The scouts and the automatic rifleman are on outpost. Lieut. A checks the ammunition supply and finds there is sufficient to continue the advance.

There are 6 prisoners with the section. Lieut. A sends them to the support under escort of a slightly wounded man. He sends a runner with them as far as the farm

with the following message: "To platoon sergeant. Move 2nd section 50 yards into wood. Send prisoners to 3rd platoon."

In the reorganization of the 2nd section at the farm the following points of interest are noted:

The section is reorganized by its leader, under the supervision of the platoon sergeant.

The section leader, from a position south of the barn, blows his whistle to attract attention, and signals: "Assemble." All corporals rally the men near them, regardless of the squad to which they belonged, and move at a run to the section leader, taking prisoners with them.

The section leader orders, "Bowman (guide), take charge of the prisoners." The guide forms the prisoners in line, facing the section, and rapidly searches them for weapons and documents.

The section leader then orders his men: "Fall in. 1st section men on the right." He checks the casualties and reorganizes the squads, seeing that each has at least a leader, one scout and automatic rifleman. He inspects the ammunition supply, and causes the automatic rifle magazines to be reloaded.

The leader then orders: "Johnson and Williams (scouts of 4th squad), look for the wounded." The two men find several seriously wounded at the farm. They assist them in administering first aid, see that each is in a safe and comfortable place where he can easily be found by the medical personnel. They do not move any wounded unless absolutely necessary.

The platoon sergeant supervises this procedure. Shortly after its completion the message from Lieut. A, directing that the section be moved forward, is received.

Upon receipt of Lieut. A's message the platoon sergeant orders one of the corporals of the 2nd section, who is slightly wounded: "Wilson, take charge of all the prisoners and conduct them to the support platoon." Wilson assembles all the prisoners, those from the 1st section, sent back by Lieut. A included. He takes possession of all the documents that have been found on them, and accompanied by the guard from the 1st section, marches them to the rear.

The platoon sergeant then orders the section leader: "Squad columns, follow me," and leads the section forward to the woods. On the way he orders the section leader: "This section will deploy at the edge of the woods, move forward 50 yards and take position to protect the platoon from counter attack."

As the section reaches the edge of the woods the leader orders: "As skirmishers." The section advances 50 yards into the wood, passing the outpost of the 1st section. The leader then orders: "Halt."

The platoon sergeant moves along the line of the section and verifies its position. He then moves back to the edge of the woods and reports to Lieut. A, as follows: "The 2nd section is deployed 50 yards in the wood. The men on outpost from the 1st section have been relieved, and have rejoined their squads. There were five casualties in the 2nd section, including one corporal. We reorganized without breaking up any squads. Twelve additional prisoners were sent back, with the wounded corporal as guard."

Upon receipt of this report from the platoon sergeant, Lieut. A sends the following written message by runner to his company commander:

1st platoon,
(Time).

To C. O., Co. B.

Platoon reorganized in woods behind farm. Twelve casualties, eighteen prisoners. Will continue to advance.

A, Lieut.

Lieut. A orders the leader of the 1st section: "We will continue the advance. The 2nd section forms the first wave. Follow with the 1st section in line of squad columns at 40 yards intervals, 50 yards in rear of the 2nd section. I shall be at the head of the 2nd section. Any questions?" This order is given in the presence of the platoon sergeant.

Lieut. A, accompanied by his runners, moves 50 yards into the woods, where he finds the 2nd section deployed in line of skirmishers. He orders the section leader: "We will continue the advance. Your section forms the first wave. The 1st section will follow at 50 yards (while in the wood). Follow your scouts at 50 yards. I will remain with this section. Any questions?"

As soon as Lieut. A observes that his section leaders have completed the dispositions he has directed, he orders and signals both sections: "Forward." The platoon continues the advance.

Exercise 5. Sand Table Demonstration. Infantry Rifle Platoon; Approach March.

NOTE.—This demonstration may also be adapted to topographical map (preferably large scale), relief map or actual terrain. In the absence of a sand table the map herewith may be reproduced on the blackboard, using colored chalk. It should be made on as large a scale as the blackboard allows. (See Plate 37.)

Procedure.

(a) Prepare one or more sand tables to represent the terrain shown in Plate 37. (See instructions for preparation of sand table at beginning of this course.) If the students are not already instructed, explain briefly how the sand table terrain is prepared, its scale, exaggeration of vertical heights, and the manner in which various features are represented.

NOTE.—There should be one sand table to each 12 to 15 students unless seats are provided permitting all to see one table.

(b) Read the introduction to the demonstration, which gives its purpose and scope, and the principles it is intended to illustrate.

(c) Read and explain the general situation, pointing out the relation of the terrain shown on the table to this general situation.

(d) Read and explain the special situation, pointing out on the table the localities referred to and the positions of the various units involved. Answer any questions, and make sure that the situation is fully understood.

(e) Read Demonstration I, explaining in detail each item thereof.

(f) Read the comments following Demonstration I, pointing out the principles illustrated and the problems involved.

(g) Continue in like manner to read each demonstration in order. When positions of troops or individuals are described, stake them out in their actual positions on the table, using pins (or matches) of distinctive colors. Indicate the routes of movement mentioned.

(h) Upon completion of the entire demonstration summarize the instruction given. Encourage questions and discussion.

Introduction.

The mission of the leader of the infantry rifle platoon in the approach march is to bring an organized and disciplined unit safely and intact, to the locality where it is to enter the fire fight in accordance with the plans of higher commanders.

The conduct of the approach march of the platoon has been discussed in the seventeenth lesson.

Each situation arising during the approach march will present the platoon leader with certain problems which he must solve in the accomplishment of his mission:

The details will never be twice the same, but in general there are certain definite problems which are inherent in this particular maneuver, to wit:

1st. To maintain the proper direction of advance.

2nd. To regulate the rate of advance.

3rd. To maintain necessary contact during the advance.

4th. To provide for the necessary reconnaissance of the terrain traversed.

5th. To provide for the security of the platoon during the advance.

**FIG 3**

Note: All distances and intervals = 30 yds.

**FIG 2**

Note: Detour 350 yds. from road junction.

0 1 2 3 4 500 6 7 8 9 1000 YDS.

**FIG 1**

This demonstration is designed to illustrate the circumstances in which these problems are presented to the platoon leader, and the exact manner in which he solves them.

General situation. June 11, 1921. Reds and Blues are at war.

The territory shown on this table is Red.

The Red forces, on a wide front, have been retiring slowly north before a vigorous Blue offensive.

The Blue attack yesterday (June 10) effected a penetration of more than a mile on the division front east of the area shown on the table.

Special situation. The 1st Battalion, 1st Blue Infantry, in the front line of the 1st Division, with two companies in its assault echelon, holds the line of the road AB, from the bridge over TOMS CREEK to a point 800 yards east thereof. The men are occupying the road ditches and fox-holes.

The 2nd Bn., 1st Inf., 1000 yards south of the road in reserve, has been ordered to pass through the 1st Bn. and continue the advance, at 6.00 a. m., June 12.

Lieutenant A, leader of the 2nd platoon of Co. F, 1st Inf., took the following notes from the verbal order of his company commander at 10.00 p. m., June 11.

"Intelligence reports indicate that the Reds on our front are retiring, to straighten out the salient resulting from yesterday's attack.

"The 1st Bn. reports the enemy quiet in their front.

"The enemy has been shelling our front line, and the edge of the woods to the north with gas, which corroborates reports of his retirement.

"The 2nd Bn. will pass through the 1st Bn. and continue the advance. The leading elements will cross the road AB at 6.00 a. m., June 12. Direction of advance, N. 7° E.

"This company (F) will be the right assault company of the battalion, with E Co. on our left and the 4th Inf. on our right. G and H Cos. in reserve, follow Co. E.

"The 1st and 2nd platoons will form the assault echelon, each covering a front of 200 yards. The 1st platoon, left and base platoon, will cross the road AB with its right 600 yards east of the bridge (TOMS CREEK). The 3rd platoon, in support, will follow the 1st at 500 yards.

"Each platoon leader will form his platoon in its zone of action, and be ready to advance at 5.30 a. m., June 12.

"Battalion aid station in rear of the battalion reserve. Prisoners will be sent to the support platoon.

"The company commander will follow the 1st platoon."

Demonstration 1. Lieut. A's Estimate of the Situation at this Time.

Mission. Lieut. A's mission is to move his platoon forward in its assigned zone of action, solving the problems this maneuver presents, and to bring his unit safe and intact to the point at which it will enter the fire fight.

Enemy. From the information he has received Lieut. A knows that the enemy is in retreat. He believes that the first part at least, of the attack of the next day, will be an approach march to gain contact with the enemy. Just where the enemy will begin to offer resistance, and what this resistance will be, is not certain at the present time. Early in his advance, however, he may expect to encounter hostile artillery fire, including high explosive and gas.

His own troops. Lieut. A's platoon will be the right assault platoon of the company, with the 1st platoon on his left, and the 4th Infantry on his right. The 3rd platoon of his company will be in support, and Cos. G and H will form the battalion reserve. All of these will be available to support him.

Lieut. A knows that there will be an interval of perhaps 200 yards between his platoon and the 4th Infantry on his right. Contact groups from supports and reserves will be placed in this interval.

Terrain. Lieut. A carefully examines on his map the terrain over which he must pass. As he will probably have a long approach march without much interference

from the enemy, the terrain will exercise a great influence on his dispositions and movements. From his map he derives much valuable information which will aid him in solving a number of the problems that will confront him, as follows:

(a) He locates the point where the center of his platoon will cross the line of departure (the road AB) by measuring 700 yards east from the bridge over TOMS CREEK.

(b) He draws from this point a line bearing N. 7° E. (using his compass as a protractor). This is his direction line for the advance.

(c) He studies the terrain through which this line passes and notes:

(1) That after crossing the road there is about 1500 yards of open, rolling country extending to the edge of the woods.

(2) That the 1st bound of his advance will be from the support position to the road AB, and the 2nd bound from the road to the edge of the woods to the north.

(3) That just before reaching the edge of the woods he will pass a road junction (C) within his zone of action. As there is no other similar feature with which it might be confused, this road junction will serve as an excellent check on his position and direction as he reaches the edge of the woods.

(4) That after entering the woods he must move therein for a distance of about 1200 yards without any visible landmarks to guide him. The passage through these woods will constitute the 3rd bound of his advance. (Lieut. A fully expects to find the woods gassed.)

(5) That upon emerging from the woods he will require a landmark to check his position. That if he emerges from the woods at the right point he will be able to see the point (D) where the unimproved road crosses TOMS CREEK. He notes that this point should be about 800 yards N. 22° W. from where he comes out of the woods.

Lieut. A believes that it will probably be necessary for the platoon to halt while the scouts reconnoiter the near edge of the woods in his front. It is unsafe to approach very close to any locality where an enemy may be concealed until it has been thoroughly reconnoitered. Such a halt should be made in a sheltered position, and Lieut. A notes that the low ground between the two roads affords such a position.

Conditions. Lieut. A believes there are no conditions known to him at this time, other than those he has already considered, which will exercise any decisive influence on his plans. The weather is favorable. The country is very thinly populated, and probably all of the inhabitants have already moved out.

Plans. Lieut. A's orders require him to move forward in a specified zone of action at a specified time. His plans for the immediate future are hence limited to deciding what bounds he will make, and the proper formations for the advance of his platoon. Emergencies will no doubt arise. Lieut. A knows something of the nature of the emergencies which he may encounter. He knows that by adopting proper formations and conducting proper reconnaissance he best prepares to meet them. Future situations he will estimate as they arise.

From the study of his map Lieut. A has planned his bounds. As the first bound will be in rear of friendly troops in position, he can adopt the formation most convenient for advancing, unless it is necessary to deploy to escape the effects of hostile artillery fire.

In crossing the open terrain constituting his second bound he plans to deploy his platoon:

(a) With scouts well to the front for reconnaissance.

(b) With such distance between his sections that one will be under cover while the other is exposed.

(c) With each section in line of squad columns at 50 yards interval, for security against possible artillery fire.

Lieut. A plans to halt his platoon in the low ground between the two roads while his scouts investigate the near edge of the woods.

In passing through the woods maintenance of direction and contact will be difficult. Lieut. A plans to reduce intervals and distances within the platoon to not to exceed the limit of visibility in the woods, and if necessary to use flank patrols to maintain contact with adjacent units.

Upon reaching the far edge of the woods, and before entering the open terrain. Lieut. A plans to check his direction of advance and his position, and to re-establish visual contact with adjacent units. He plans to halt his platoon inside the woods while doing this. Upon leaving the woods he will extend intervals and distances within the platoon to the extent that security in open terrain demands.

Lieut. A believes that it is unwise to attempt to plan any farther into the future. He realizes that even the plans he has already made are tentative, and that conditions may cause him to change them. Therefore he will give his orders no earlier than is necessary.

Comments. This demonstration shows how a platoon leader estimates a situation and anticipates his problems by forming tentative plans for their solution, extending a reasonable period into the future.

It also illustrates the proper use of a map as an aid in the solution of the problems which his situation presents to the leader, to wit:

1. Selection of suitable bounds in which to conduct the advance. (Maintenance of direction and Security.)
2. Selection of landmarks as guides to the advance. (Maintenance of direction.)
3. Anticipating the problems of reconnaissance. (Maintenance of contact, Reconnaissance and Security.)
4. Deciding tentatively upon suitable formations for different stages of the advance. (Maintenance of contact and Security.)

Demonstration 2. Orders and Actions of the Platoon Leader, up to the Time He Reaches the Line of Departure.

Inspection. On the night of June 11-12, immediately after having received his orders, Lieut. A inspects his platoon. He does this as early as possible, in order to give his men the utmost possible rest. He notes the condition of his men and their equipment, especially their weapons, ammunition and gas masks. He requests any supplies that may be necessary from his company commander. He sends a non-commissioned officer and a few men to draw these supplies from the combat train which, with the company kitchen, is in a sheltered position some 500 yards in rear, under charge of 1st Lieut. B (2nd in command in the company).

Orders. Lieut. A orders his platoon to be prepared to form at 5.00 a. m. the next day (June 12). At this time he forms the platoon and moves with it to a point from which the platoon's line of departure on the road AB is visible. Here he issues his orders, pointing out the localities referred to:

"The enemy has withdrawn from our front. He has gassed those woods.

"Our 1st Bn. is now in position along that road. We will move forward, pass through the 1st Bn. and continue the advance.

"This platoon is the right assault platoon of the battalion, our 1st platoon, the base platoon, is on our left, the 4th Inf. on our right. Our 3rd platoon, in support, follows the 1st.

"The 1st squad, base squad, will cross that road at the high point of that little rise, 700 yards east of the bridge, and advance N. 7° E. Our zone of action is 200 yards.

"Jones (senior scout, 1st section) the scouts of the 1st section, under your command, will precede the platoon by 200 yards, in diamond formation, covering a front of 200 yards. Have you the direction point? Be ready to move out.

"Gas masks will be at the ready.

"The battalion aid station will be in rear of the battalion reserve, which follows Co. E, on our left.

"Questions?"

Lieut. A then orders:

"Green (runner) report to the company commander (indicating his direction) and remain with him. Give him this message:

"To Capt. B. Second platoon in position, ready to advance."

Green repeats the message and departs.

At 5.35 a. m. Capt. B signals, "Forward." Lieut. A acknowledges the signal by repeating it back. He orders: "Scouts out."

To the platoon sergeant: "Follow me with the platoon at 30 yards in section columns without distance."

To his runners (who are with him) when the scouts have advanced about 125 yards: "Black and White, follow the scouts at that distance, keep about 100 yards apart. Each of you observe the troops on your flank. Do you see them now? Move out."

When the scouts have advanced about 175 yards Lieut. A and his remaining runner move forward, the platoon following at 30 yards with Sgt. X (platoon sergeant) at its head.

Comments. This demonstration indicates the simple preliminaries to a platoon approach march, and a typical platoon order.

Details of the situation and sources of information are of little value or interest to enlisted men. With the exception of the second in command, it is not necessary that they should know what is going on in the mind of the leader. The dispositions of the troops, other than their immediate neighbors on the flanks and in rear, do not interest them nor affect their actions. They should know the location of the aid station so that they can walk back to it if slightly wounded.

The formations, distances and intervals within the platoon are important. These are directly controlled by the leader, using the drill regulation commands or signals. These regulation commands and signals should be used for all situations to which they are applicable, and that will be the majority in the case of a platoon.

The order provides only for the initiation of the forward movement. It does not look into the future. Lieut. A will be with his command at all times, and will give his orders as they are called for by the situations that arise.

Demonstration 3. Orders and Actions of the Platoon Leader upon Reaching the Line of Departure.

As the scouts reach the road AB (line of departure) Lieut. A signals "Halt," to them and to the platoon. He signals to the platoon sergeant, "Squad columns," which order is executed at once, each section forming line of squad columns at about 50 yards interval, without advancing.

Lieut. A moves to the road and makes a personal reconnaissance of the foreground. He checks the direction to the road junction (C) with his compass. He orders the scouts as follows:

"We advance at 6.00 a. m. Do you see that road junction? (pointing to C). That is our direction point. Cover the platoon front of 200 yards. Questions?"

At 6.00 a. m. Lieut. A orders: "Scouts out."

To the runner who is with him: "Brown: To Sgt. X (platoon Sgt.); Platoon will follow me at 100 yards, 150 yards distance between sections. Base squad guide on me." Brown repeats the message and carries it to Sgt. X, returning then to Lieut. A.

Comments. This demonstration further illustrates the simple commands and orders with which the platoon leader controls his unit. These orders are characterized by their brevity and by standard forms. Rambling orders expressed in unmilitary language would confuse his subordinates and undermine their confidence in

their leader. When it is impossible, by reason of distance, to give his orders verbally, and when they cannot be conveyed by a simple signal, Lieut. A uses his runners to transmit them. It is for this purpose that runners are provided.

The demonstration also illustrates the regulation of the advance by means of bounds from one selected locality to another. At the end of each bound the platoon leader makes a personal reconnaissance of the foreground, halting his platoon if necessary, and selects landmarks to guide his next advance. It is far easier to march on a conspicuous point of the terrain than to follow a certain compass bearing without landmarks. Lieut. A accordingly assigns to his scouts the road junction (C) as the direction point for the next bound.

Demonstration 4. Location of All Elements of the Platoon as the Last Man Crosses the road AB.

Occasional shells are falling in front of the platoon.

When the scouts are about 125 yards ahead Lieut. A sends out his two runners with the same orders as before. He and his third runner follow them at 50 yards distance.

The section leader, 1st section, follows Lieut. A at 100 yards, his section in line of squad columns at about 50 yards intervals.

The second section, in the same formation, follows the 1st at about 150 yards.

The platoon sergeant takes post midway between the two sections where he can control the actions of both.

See Fig. 1, Plate 37.

Comments. This demonstration illustrates a suitable formation for a platoon in the approach march over open terrain, subject to artillery fire. It provides for Reconnaissance, Contact and Security, and enables the platoon leader easily to guide and regulate the advance.

Demonstration 5. Action of the Platoon upon Approach of an Aeroplane.

As the scouts reach a point about 800 yards north of the road AB an aeroplane, flying low, appears from the north, circles over the battalion, and returns north.

As soon as Lieut. A sees the plane he attracts the attention of his platoon by blowing his whistle, and signals "Lie down."

All members of the platoon drop to the ground and lie motionless, their faces down and hands under their bodies.

Lieut. A watches the plane through his glasses. He identifies it as a hostile plane. When it departs he rises and signals, "Forward."

Comments. It is not part of Lieut. A's mission to attack this plane. It does not endanger his platoon. On the contrary, should he attack it he would betray his presence and probably furnish the aviator just the information he is seeking. It is his mission to conceal his platoon from the aviator.

Moving objects and white, upturned faces are readily observed from the air. Hence Lieut. A halts the platoon, and the men, as a matter of training, keep their faces down. Their uniforms blend with the ground and are difficult to distinguish. Lieut. A alone watches the plane.

The security of his command calls for the action taken by Lieut. A. Had the plane discovered and fired upon his platoon his action would have been different. In this case the men would have returned the fire.

Demonstration 6.

As the scouts arrive within some 200 yards of the road through C, they signal, "Halt."

Lieut. A interprets this signal, "You had better halt here (where the scout is) while we investigate to the front."

Lieut. A signals, "Halt," when he reaches the place from which the scouts signaled. The platoon halts in the low ground between the two roads, the men lying down. They are here secure from rifle or machine gun fire from the south edge of the woods. Lieut. A had foreseen that a halt would probably be necessary while his scouts investigated the near edge of the woods. From his map he had noted that this low ground would be a favorable place in which to halt. The scouts also noted this as they passed over the ground, and gave the signal to halt at the right time.

Lieut. A moves forward to the road to watch the progress of his scouts from the high ground. He sees the scouts put on their gas masks, and notes that Black and White follow their example. Lieut. A faces towards the platoon, raises his mask so that they can see it and puts it on. He sees his section leaders obey the order thus conveyed and cause their men to do likewise.

Each pair of scouts reconnoiters about 50 yards into the wood, one remaining at the near edge while the other enters. As soon as they satisfy themselves that the edge of the woods is clear, the rear scouts signal, "Forward." Black and White, the runners, repeat the signal, and move towards the woods.

Lieut. A signals to the platoon, "Forward," and himself moves towards the woods.

Comments. This demonstration illustrates in detail a phase of the problems of Reconnaissance and Security. It is not safe to enter a wood or any other locality where an enemy might be concealed, until it has been thoroughly reconnoitered. If necessary the platoon must halt until such reconnaissance has been made. The halt should be made at a safe distance, and in a sheltered locality if there be one.

Only the simplest signals, and a very limited number of them, are authorized, as there is too great a danger that complicated signals will be misunderstood. The signals of the scouts are limited to three: "Halt," "Forward," and "Enemy in sight." Two of them are used in this demonstration. Lieut. A's signal, conveyed by putting on his gas mask, is readily understood. This was a proper measure of security, as Lieut. A had been informed that the woods had been gassed.

The demonstration also indicates the manner in which the scouts reconnoiter the edge of a wood. It will be noted that one of each pair remains at the edge of the wood, to maintain contact between the platoon and the other scout inside the wood.

Demonstration 7. Passing Around a Small Area Which is Under Concentrated Artillery Fire.

Just as Lieut. A signals, "Forward," to the platoon, and himself starts towards the woods, a high explosive 3-inch shell strikes exactly on the road junction (C). Lieut. A runs rapidly towards the woods.

Within the next minute 12 shells strike within 200 yds. of the junction.

The leader of the 1st section, which is just starting forward, notes this concentration of artillery fire. He signals and orders, "Change direction to the left," and leads the section into the zone of action of the next platoon, making a detour around the road junction, and keeping about 350 yards away from it. In making this detour the section leader notes the point at which Lieut. A enters the woods. By moving to this point after his detour the section leader will be back on his line of march. Had he detoured to the right he would have to move through the woods (with no scouts) to reach this point and it would have been more difficult to maintain his direction.

The platoon sergeant and the 2nd section conform to the movements of the 1st section.

See Fig. 2, Plate 37.

Comments. This demonstration indicates the manner of avoiding danger areas during the approach march, and the flexibility of the approach formation adopted. It also shows that in an emergency a platoon may temporarily leave its line of advance and enter the zone of action of an adjacent unit, selecting an advanced point

on its proper direction line to guide it in returning thereto. In a plain emergency subordinate commanders of all grades must act on their own initiative, as did the leader of the 1st section in this instance. The demonstration illustrates phases of the problems of Security and Maintenance of Direction.

Demonstration 8. Passing Through Dense Woods.

Lieut. A had already planned, from his map, to reduce the intervals and distances within his platoon to the limit of visibility in the woods, while passing through. Except for the reduced intervals and distances the platoon will keep the same formation, in which the scouts are in front where they can see as far as the enemy could see. The 1st section is sufficiently far behind the leading scouts (about 80 yards) to be safe, in such close terrain, from fire directed at the scouts.

On reaching the woods Lieut. A halts just inside the edge, on line with Black and White (runners). He looks back to observe the conduct of his platoon. He estimates the limit of visibility in the woods at about 30 yards. The scouts and runners are halted in the woods. Lieut. A can see the rear scout of the center pair. The 1st section, followed by the 2nd, is approaching the point at which Lieut. A entered the woods.

Lieut. A orders, "Scouts close in until you can see Jones or Greer" (the center pair). Jones directs the flank scouts, by name, to close in. Black and White, as a matter of training, close in until they can keep Lieut. A in view.

As the leader of the 1st section approaches the woods Lieut. A orders, "Squad columns, 30 yards." This order reduces the intervals in the 1st section to what Lieut. A desires for passage through the woods.

When the leader of the 1st section, still advancing, is about 30 yards behind the line of the runners (Black and White), Lieut. A orders and signals, "Forward." This order sets his scouts and runners in motion through the woods, at the proper distances in front of the 1st section.

Lieut. A remains in the edge of the woods, and as the section guide of the 1st section, who is following about 20 yards in rear of the 1st squad, reaches him he orders, "Halt." This order is passed up through the 1st section to the runners and scouts. Except for the 2nd section, the entire platoon is now halted, the 1st section just inside the woods, all with the distances and intervals Lieut. A desires.

As the platoon sergeant, preceding the 2nd section, approaches him Lieut. A orders, "Have the 2nd section follow the 1st at 30 yards. Reduce the intervals between squads to 30 yards. Send out the scouts of the left squad to maintain contact with our 1st platoon. Remain with the 2nd section. I will be in front of the 1st section."

When the leader of the 2nd section arrives within 30 yards of the section guide of the 1st section, Lieut. A signals and orders, "Forward." The order is passed up through the 1st section to the runners and scouts. The entire platoon now moves forward through the woods with intervals and distances reduced to the limit of visibility in the woods as Lieut. A had planned. Lieut. A moves rapidly to his place in front of the leading section.

Lieut. A keeps his compass constantly in his hand. He selects prominent trees on his line of march as direction points. As he approaches one such tree he selects another, farther in advance, and cautions the center scouts when they are off the proper direction line. (See Fig. 3, Plate 37.)

Comments. This demonstration illustrates especially the solution of the problems of maintaining Direction of advance and Contact in a dense wood. It shows how, by simple commands, distances and intervals may be reduced to the limit of visibility in the wood. It shows the constant watchfulness that is required to maintain the proper direction of advance when it is impossible to use distant landmarks.

Lieut. A sends out the scouts of the left squad of the 2nd section to form a chain of contact with the adjacent platoon on his left. The interval on his right is prob-

ably about 200 yards, and it would require too many of Lieut. A's men to maintain contact across such an interval in so dense a woods. To bridge this interval is a function of support units.

In woods shrapnel and high explosive shell are less dangerous than in the open. The fire cannot be observed, and the trees cause air (premature) bursts. The branches also limit the dispersion of splinters. Hence, reduced intervals are less dangerous than in open terrain. For these reasons large woods are not often subjected to such fire. Gas, on the other hand, is more dangerous than in the open, as the woods confine the gas and prevent its dissipation by the sun. Hence woods are frequently gassed.

In woods march discipline must be rigidly maintained, as the chances for men getting out of column and becoming lost, especially when wearing gas masks, may cause disruption and loss of control of the platoon.

In moving through woods, without a constant check on direction, there is a tendency to move to the left on a circle, 1000 to 2000 yards in diameter.

Demonstration 9. Correcting an Error in Direction of Advance. Reconnaissance from a Covered Position before a Bound.

As the scouts reach the north edge of the woods Lieut. A halts the platoon.

Artillery fire of small caliber would indicate that the enemy may not be far distant.

Lieut. A wishes to verify on the ground his impressions as to the country in front of him, derived from his map.

He notes that he is closed in against the 1st platoon. If both had maintained the proper direction of advance in the formation adopted for passing through the woods (with only a 60-yard front) there should be an interval of about 150 yards between the two platoons. Lieut. A therefore desires to check his position, and correct it if necessary, returning to his proper line of direction. He wishes to select new direction points and indicate them to his scouts and base squad. He wishes also to re-establish visual contact with the 4th Inf. on his right. He intends to extend the intervals and distances within his platoon as appropriate for reconnaissance and security in the open terrain over which he is about to pass. He can best do this by halting at the edge of the woods, and sending the elements of his command forward one at a time.

Careful personal reconnaissance is necessary to the solution of these problems. Lieut. A joins the scouts at the edge of the wood.

He locates the unimproved road, and the ford where it crosses TOMS CREEK. The ford is about 800 yards distant, as it should be, but Lieut. A notes that its bearing is N. 7° W. Lieut. A knows from his map that if he were in his proper place this bearing should be N. 22° W. Evidently he is about 200 yards to the west of his proper position, and entirely out of his zone of action. This is also indicated by his being closed in on the 1st platoon.

Lieut. A decides to rectify this error while still under cover of the woods. He cannot select a direction point for his next bound until he has done so.

He orders, "By the right flank, March." This order is passed back, scouts, runners, 1st section, platoon sergeant, 2nd section. The entire platoon moves to the right. Lieut. A moving opposite the center of the platoon, in the edge of the woods, halts the platoon when the compass bearing of the ford is N. 22° W.

He now completes his reconnaissance. He verifies the fact (noted from his map) that his next bound is over some 1500 yards of open, rolling country. He selects a farm building, bearing N. 70° E. as a good direction point.

He can now see the troops on his right, and notes that the 4th Infantry is just leaving the woods, about 300 yards to the east. His own base platoon is also just starting forward.

Comments. This demonstration shows how the advance by bounds, properly conducted, aids in solving the problems of the platoon leader. (Maintenance of direction and regulation of rate of march, contact, reconnaissance and security.)

Lieut. A has utilized the halt at the edge of the woods to make reconnaissance, checking his position and correcting an error in same, selecting new direction points, and establishing contact with the troops on his flank. The concealment of the woods affords necessary security to the platoon during a movement to the flank.

This demonstration, like those preceding, also shows that the simple commands and signals of the drill regulations will usually be the best and quickest means even for executing difficult movements in close country. Proper contact is necessary for the transmission of orders and control of the movement.

Demonstration 10. Emerging from a Wood. Taking Intervals and Distances for Crossing Open Terrain.

Lieut. A decides to move over the open ground now in his front in the same formation as when last on open ground. He orders his scouts, "Do you see that red barn (pointing) about a mile from here? It will be our direction point. Questions? Scouts out."

When the scouts have advanced about 125 yards he sends out Black and White with the usual orders to observe the flank units.

Lieut. A orders the platoon sergeant (who has joined him at the edge of the woods), "Have the 1st section follow me at 100 yards and the 2nd section follow the 1st at 150 yards. Extend intervals between squads to 50 yards."

Lieut. A and Brown (his 3rd runner) follow about 50 yards in rear of Black and White.

The platoon sergeant directs the 1st section to move out at the proper time (extending intervals between squads as it does so), and later the 2nd section, taking his own post midway between them.

Comments. The demonstration shows how by a few simple orders the platoon leader places his command in the formation he desires, initiating its movement from one covered position to another.

Summary.

The preceding demonstration necessarily presents a particular case of the platoon in approach march. Only thus is it possible to show exactly what the platoon leader does in performing his various duties. The whole purpose of the demonstration is to translate abstract principles into actual practice. For example we are told that the platoon leader "must maintain the proper direction of advance." But just how does he do this? The demonstration answers this and similar questions. It is believed that, if the prospective platoon leader thoroughly understands everything that Lieut. A does in this demonstration, and the reasons why and manner in which he does it, he will himself be able to actually lead a platoon in the approach march and to meet the situations that will confront him, although these situations will necessarily differ in detail from those which confronted Lieut. A.

The following are some of the salient features of this demonstration to which it is desired again to call attention:

A good map is of the greatest assistance to the platoon leader in making his plans and solving his problems. He should have a thorough knowledge of maps, how to read them, and how to utilize the information they convey. He verifies on the terrain the information conveyed by his map.

While Lieut. A makes tentative plans extending a reasonable distance into the future, he makes definite plans and issues definite orders to cover the immediate situation only.

All of Lieut. A's orders are brief and simple, and whenever possible are expressed in the language of the drill regulations. This is the language of the soldier. Lieut. A's men, if properly trained, will be used to these standard commands, and will obey them almost instinctively. If the commands are given in rambling, unprofessional language they will not be understood, and the men will quite naturally (and properly) jump to the conclusion that their leader is not thoroughly conversant

with his own duties. When vocal commands are impossible, by reason of distance, Lieut. A employs simple signals, and messages by runner. Such messages are usually limited to a single definite order.

Intercommunication within the platoon is thus achieved as a rule by vocal commands, a few simple signals, and short messages transmitted by runner.

Lieut. A has five main duties to perform, as mentioned in the introduction. Everything that he does is in carrying out one or more of these duties.

It will be noted that he is at all times greatly concerned with the duty of maintaining the proper direction of advance, especially when moving in woods. "More attacks fail from loss of direction than from any other cause." Entire divisions have lost direction and disintegrated in passing through dense woods. The beginning of the disintegration of the division is that of its assault platoons.

Lieut. A maintains direction by the intelligent use of his map and compass, and by using the landmarks the terrain affords. He should be expert in the use of the map and compass, and in locating his position on the ground. He also maintains visual contact with the units on his flanks, especially the base platoon of his company, which is the guide for the movement. He takes advantage of every opportunity to check his position and direction.

In this case Lieut. A himself has been the guide for his platoon. The base squad guides on him. Only the corporal of the base squad guides on Lieut. A, and all the rest of the platoon (except the scouts and runners) guides on the corporal of the base squad. Lieut. A may, if he considers it advisable, assign a direction point to the base squad. In any case a base squad is necessary to properly regulate the movement. Lieut. A always gives a direction point to his center group of scouts, and sees that they maintain the proper direction.

Lieut. A does not entrust the duty of reconnaissance solely to his scouts. Personal reconnaissance is a duty of the platoon leader. Lieut. A remains in front of his unit, as the leader of a small command should, and himself reconnoiters every locality through which the platoon must pass.

Having his mission constantly in mind Lieut. A does not allow himself to be diverted from its proper performance by any such episode as the appearance of a hostile plane. Such occurrences do not in any way affect his mission, which is to continue his advance.

Lieut. A insures the security of his platoon by constant personal reconnaissance, and by adopting in each situation the formations which experience has proven to be wise. These vary with the terrain, the formation in dense woods having less intervals and distances than one appropriate to open country. During the approach march artillery fire may be encountered, and the formation should be such as to limit or localize the effects of such fire.

The platoon sergeant, in addition to being ready to replace the platoon leader in case the latter should be wounded, assists Lieut. A in the performance of certain of his duties, chiefly by supervising the conduct of the two sections. He thus enables Lieut. A to go to the front to make personal reconnaissance and direct the operations of his scouts.

Exercise 6. Sand Table Demonstration. Infantry Platoon in Attack. Open Warfare.

NOTE.—This demonstration may also be adapted to topographical map (preferably large scale), relief map or actual terrain. In the absence of a sand table the map herewith may be reproduced on the blackboard, using colored chalk. It should be made on as large a scale as the blackboard allows. (See Plate 38.)

Procedure.

(a) Prepare one or more sand tables to represent the terrain shown in Fig. 1, Plate 38.

(b) Read the introduction to the demonstration which gives its purpose and scope and the principles it is intended to illustrate.

(c) Read the general situation and supplement it with explanations, pointing out the directions, the scale and the terrain features represented on the table.

(d) Read and explain the special situation, point out the localities referred to, and mark the troop dispositions on the table with pins or matches. Answer questions and make sure the situation is fully understood.

Explain that it is impossible to represent all distances and intervals to scale.

The troop dispositions at the opening of the problem are shown in Fig. 1, Plate 38.

(e) Read Demonstration 1, explaining in detail each item thereof.

Read the discussion of the troop movements and illustrate this discussion by moving the pins to the positions indicated in Fig. 2, Plate 38. Point out the lines of movement as indicated by the dotted lines. Discuss the manner of moving.

Read the comments following the demonstration, emphasizing the points brought out. Ask for questions. Encourage discussion.

(f) Continue in like manner the following demonstrations, proceeding in each subject as set forth in (e).

Upon completing the entire demonstration, summarize the instruction covered and encourage questions and discussion.

Introduction.

The conduct of the infantry platoon in attack has been covered in the preceding lessons.

The mission of the platoon leader is to push man power forward until he can close with the enemy and capture or drive him from position.

In the accomplishment of this mission the platoon leader will encounter problems which will vary with each situation. The details will never be twice the same, but in general there are certain definite problems which are inherent in this type of maneuver. Amongst these are included:

1st. Reconnaissance. To locate the objective (target), and to study the ground to see what facilities it affords which may aid in the use of the men and weapons of the platoon in capturing the objective.

2nd. Orders. Each situation in the attack demands a simple plan of action, based on reconnaissance and an estimate of the situation, and followed by clear and definite orders conveying the platoon leader's plans to his subordinate leaders.

3rd. Fire and movement. To push man power forward in the face of enemy fire requires a skilful combination of fire and movement. Movement may take the form of direct frontal advance or of envelopment of the flanks of the hostile position.

4th. Assault. Every attack logically culminates in an assault on the hostile position. The enemy may not remain until the actual launching of the assault, but the attack must be pushed with the intention and expectation of finally closing in a personal combat to capture or drive him out.

5th. Reorganization. Immediately after a successful attack units must be reorganized preparatory to resuming forward movement or consolidating the position gained.

This demonstration is drawn up to present situations which will illustrate these problems and their solutions.

General situation. Reds and Blues are at war.

The territory shown on this table is Red.

The Red forces have been retiring slowly for several days before a vigorous Blue offensive, covering their retirement with machine guns, supported by small infantry detachments.



PLATE 38.—Sand Table Map.

Special situation. The 1st bn., 1st Blue infantry, part of the Blue forces advancing on a wide front, halted to reorganize in the north edge of the BELLEAU WOODS after an unopposed advance of $\frac{3}{4}$ of a mile through the woods. The 2nd Bn., 1st Infantry, is on the right of the 1st Bn. The 1st platoon, Co. B, is the right assault platoon of the 1st Bn. The right of its zone of action is marked by the unimproved road running south through the woods. It is covering 200 yards of front. The 2nd platoon, Co. B, is on its left. The 3rd platoon follows the 2nd at 500 yards, in support.

Extracts from the company commander's order as received by Lieut. A, commanding the 1st platoon, Co. B:

"No new information of the enemy in our front.

"The advance will be resumed at 7 a. m. Direction N. 7° W.

* * * * *

"One section of Co. C (battalion reserve) will act as right combat patrol and maintain contact with the 2nd Bn."

Demonstration 1. Reconnaissance and Orders of the Platoon Commander Before Moving Out of a Covered Position.

Lieut. A studies his map (Fig. 1) and notes:

- (a) That the first 1000 yards of his advance is over open rolling country;
- (b) That he will cross one crest parallel to his front about 250 yards from the edge of the woods, a second (lower) about 600 yards from the edge of the wood, and a third (highest) about 900 yards from the edge of the wood. This last crest appears partly wooded and the map shows a farm on the forward slope on the line of advance of the platoon.
- (c) That a strip of woods runs along his right flank for 1000 yards;
- (d) That the country on his left flank is open.

Lieut. A makes a reconnaissance from the edge of the wood, verifying his observations from his map. With his compass he takes the bearing of the farm he sees on the crest 900 yards away, and finds that from the center of his sector it is on the line N. 7° W.

Lieut. A assembles his non-commissioned officers, scouts and runners near the edge of the wood, and explains the situation.

"There is no new information of the enemy. The battalion will resume its advance at 7 a. m. Direction N. 7° W. Do you see that farm (pointing)? The right building of that farm is our direction point.

"We will move, preceded by scouts of the 1st section, each section in squad columns at 50-yard intervals, 1st squad the base.

"Green (4th runner), report to Capt. B that the 1st platoon is ready to move, and remain with him."

Demonstration 2. Platoon Moving out of Covered Position over Open Ground.

At 7 a. m., Lieut. A commands: "Scouts out."

The scouts move forward in pairs, at intervals of 50 to 75 yards, each pair moving with 10 to 20 yards interval and distance. When the scouts are 100 yards from the edge of the wood, Lieut. A orders:

"Black and White (runners), move out." The runners move out with about 100 yards interval, Black on the left observing to the left, and left front, White on the right observing to the right and right front.

Lieut. A and the remaining runner move out as the scouts start up the hill (150 yards ahead). The 1st section advances to the edge of the woods, ready to move out when the scouts reach the first crest.

Lieut. A sees the scouts of the platoon on his left leave the woods and start their advance.

Demonstration 3. Reconnaissance of Target and Terrain.

As Lieut. A starts up the slope of the hill, the 1st section leader starts to move his section out of the edge of the woods.

The scouts 250 yards ahead are so close to the next crest that the section leader knows there can be no danger from this locality.

Rifle firing, which has been heard intermittently in front of the extreme left of the battalion zone of advance, seems to suddenly break out along the entire front.

Lieut. A hears a machine gun open fire, apparently directly in his front. The gun fires in long, almost continuous bursts.

Lieut. A sees his scouts on the crest take cover. He sees the 1st section deploy as skirmishers, and advance at double time down the hill to the stream bed, where it halts under cover.

The platoon leader moves rapidly forward to a point from which he can see to the front and obtain verbal information from his scouts. His scouts are firing tracers, some at the farm buildings and some at an area on the forward slope in front of the farm from which the sound of machine gun firing seems to come. Lieut. A studies the front with his glasses.

NOTE.—A machine gun position at 600 yards, if properly concealed, is exceedingly hard to locate. Infantry at 700 yards is also a hard target to pick up.

Demonstration 4. Platoon Commander's Estimate of the Situation and Plan of Action.

Mission. Lieut. A realizes that his general mission is to attack, to push forward. His immediate mission is apparently to capture the farm, including the machine gun in front of it. The locality of the farm is covered at short range from the woods in its rear. Lieut. A believes that in the first phase of his attack he should complete the capture of the farm by pushing on promptly and seizing the edge of the woods beyond.

Enemy. The machine gun in front is not firing on Lieut. A's position, otherwise he would be able to note some fire effect. It cannot reach his 1st section in the stream bed, and his 2nd section is still in the woods.

The woods on Lieut. A's right limit the machine gun's field of fire and Lieut. A knows that there is no target for it there. Evidently, therefore, it is firing across his front into the troops on his left. Every minute it fires it may be causing casualties and holding up the advance.

The infantry fire from the farm appears to be weak, not more than two or three squads at most, judging by its effects.

The machine gun and infantry in the farm can be reached by rifle fire from the line of scouts. The enemy have been retiring when hard pressed.

His own troops. The elements of the battalion which moved out of the woods on the left are probably receiving fire from the gun in front. This gun can direct oblique fire against these troops.

The 2nd Bn. will be working into the woods on the right. Lieut. A has protection on both flanks.

Terrain. This nose (the one he now occupies) affords a good fire position from which to initiate an attack on the machine gun and farm with rifle fire. Range about 500 yards, not too great to allow effective fire. The woods on the right afford an avenue of approach to gain a forward flank position (on the left of the farm). There is no cover for an advance on Lieut. A's left. The stream bed in rear is good cover for supports.

Courses of action open to Lieut. A. 1. Work entire platoon forward under cover of the woods to a flank position at close range.

2. Build up line of scouts and attack frontally by combining fire and movement.

3. Build up line of scouts with 1st section and move the 2nd section through the woods to a position at close range on the flank.

Any fire on the machine gun will disturb it. Rifle fire may put it out of action. The spirit of teamwork and co-operation requires that an attempt be made as soon as possible to smother this gun with rifle fire and thus assist the troops on the left.

Fire alone is not likely to drive the machine gun and the infantry in the farm from their positions. To advance across the open by fire and movement with the 1st section alone would be difficult, for the enemy is probably of equal strength and has the advantage of position.

If the second section is thrown into the firing line, sufficient fire power may be developed to permit a frontal attack.

However, the fire of the 1st section will immobilize the enemy and occupy his attention. A better plan of employment of the 2nd section would be to use the cover afforded by the woods on the right, move through this cover to a position on the flank at a range of about 200 yards. The 2nd section may meet resistance in moving through the woods. With the 2nd Bn. on the right, taking this chance is justifiable.

Decision. Plan of action. 1. Build up line of scouts with 1st section and apply fire to the target.

2. Send the 2nd section through the woods to a position on the flank of the farm at close range.

Demonstration 5. Actions and Orders of Lieut. A and His Subordinates at Opening of the Fire Fight.

Platoon leader's orders. Lieut. A signals the leader of the 1st section: "Forward," pointing to line of scouts.

He then orders, "Brown (runner), to platoon sergeant. Have 2nd section move to cover of that steep bank (pointing out the steep bank to right rear). Join me." (Brown's duty as runner has been to observe to the rear; he knows where to find Sgt. Z, platoon sergeant.)

Action of 1st section. Sgt. X, leader of the 1st section, repeats back the platoon leader's signal and orders: "Forward." He runs rapidly to the crest near the platoon leader, locates the target from the scouts' tracers, turns to his advancing section and signals: "Range, 500. Commence firing."

Each squad leader receiving the section leader's signal repeats it back and orders: "Range, 500," halts his squad just back of the crest and sees that they set their sights properly. The men of the squads work their way forward into the line of scouts and get the target from them or their tracers. Corp. Q, the section guide, supervises this movement of men into the firing line.

Sgt. X, the 1st section leader, moves to a point near the center of his section from which he can see the enemy (target), the men of his section, especially his squad leaders, and the platoon leader.

The section leader studies the target and sees that each man locates it from the scouts' tracers or designation. Corp. Q moves to within speaking distance of the leader as soon as the last man is on the line. He studies the section to see that:

1. Corporals are directing fire on the proper target.
2. Men are using cover and firing at the proper rate.

He continually observes the platoon leader for any signals or orders.

Demonstration 6. (Continuation of Demonstration 5.) Action of 2nd (Support) Section.

The platoon sergeant is on the north edge of the woods from which the platoon has just emerged, with Sgt. Y, leader of 2nd section, making a reconnaissance, when a runner reports, "From the platoon leader, have second section move to cover of that bank (the runner points it out). Join me."

The platoon sergeant orders the section leader: "You hear the order. Move through the woods to a point directly behind the bank and then cross the stream." The platoon sergeant then returns with the runner to Lieut. A.

The leader of the 2nd section returns to his section, which is in line of squad columns at about 50-pace intervals, 50 yards back from the edge of the woods, and orders: "By the right flank, march." He leads the section to a point directly in rear of the steep bank and orders: "Forward march," and as the leading files reach the edge of the woods, "Double time, march." The entire section, with its leader at its head, moves across the stream, up the slope, halting in squad columns under shelter of the steep bank.

As Lieut. A sees the 2nd section is reaching the position designated he orders: "White (runner) to Sgt. Y (leader of 2nd section), report to me." White knows where Sgt. Y is, since his duty is to observe to the right flank on which the 2nd section has been moving.

White reaches Sgt. Y just after the 2nd section has halted and reports: "From platoon leader, report to me."

Sgt. Y orders Corp. B. (section guide): "You heard that order, take charge," and accompanies the runner to Lieut. A.

Demonstration 7. Enveloping Movement against Hostile Position by 2nd Section.

Lieut. A gives Sgt. Y the following order: "That machine gun (pointing) is firing on our troops to the left. The 1st section will remain in position and fire on it and the infantry in the farm. Lead the second section through these woods (pointing), and gain a fire position on the enemy's flank, as far forward as possible. The 1st section will advance as soon as you get into action. I will remain here. Questions? Move out."

The dispositions of all elements of the platoon at this time are shown in Fig. 2, Plate 38.

Sgt. Y returns to his section, and orders: "Enemy machine gun and infantry section hold the farm about 600 yards to the front. The 1st section will continue to fire from its position on that crest. This section will move through the woods to a position on the enemy's flank and attack.

Edwards and Johnson (scouts of the 4th squad), move ahead of the section. Keep about 50 yards from the left edge of woods. Watch me for signals. Graham and Hendricks (scouts of the 5th squad, on right), move about 30 yards to the right of the section. Keep a bit in advance of us and observe into the woods. Section will follow me in squad columns at 15-yard intervals. Questions? Scouts out."

Comments on Demonstration 7. Sgt. Y considers his immediate mission to move, unobserved, to an advanced position on the left flank of the enemy at the farm.

He does not know whether the enemy occupy the wood or not. Hence, he sends out scouts in front and to the flank.

The best formation in which to pass through the woods is squad columns. Section column might be employed, but in a dense wood this might soon disintegrate into two lines of files which, if forced to deploy could not do so in a prompt and orderly fashion, as squads would be separated.

The wood affords so much cover that close intervals are possible and desirable as facilitating control. Wide intervals in woods greatly increase the difficulty of control because of the limited visibility and difficulty of communication. Hence, Sgt. Y's formation is the best he can adopt to accomplish his mission. By guiding on the edge of the woods he is sure to maintain the proper direction.

Demonstration 8. Entrance of the 2nd Section into the Fire Fight.

As Sgt. Y reaches the top of the 2nd wooded crest and notes the edge of the woods ahead, he signals: "Halt." He joins his scouts and makes a personal reconnaissance from the edge of the woods. He notes that he is within 200 yards of the farm and almost directly on the flank of the machine gun. He returns to the section and orders: "Range 200. Machine gun and infantry in farm. As skirmishers, march. Forward, march."

As the section reaches the edge of the wood Sgt. Y orders, "Fire at will." The section halts, lies down and opens fire.

The dispositions of the 2nd section at the instant of opening fire, are shown in Fig. 2, Plate 38.

Demonstration 9. Advancing the Firing Line by Rushes.

Lieut. A hears the firing of his second section. He notes the hostile machine gun cease firing, then start again after a minute, then cease altogether. He signals to Sgt. X (leader of 1st section): "Squad rush." The section guide repeats the signal back to Lieut. A.

Sgt. X signals to right squad: "Squad rush."

The squad leader repeats the signal back and orders: "2nd squad, cease firing, prepare to rush. Up."

He halts his squad on the forward slope about 75 yards ahead, but finds he cannot now see the target. He therefore immediately orders, "Follow me," and leads his squad up the hill to the next crest, where it halts and opens fire, the right three men of the squad finding firing positions in the edge of the woods.

The enemy's fire seems to be weaker. Lieut. A notes the right of the 2nd section moving out of the woods and working its way up the slope on the flank of the target. He decides to move the rest of the 1st section forward. He orders: "Section rush."

Sgt. X orders: "Cease firing, prepare to rush. Up." He leads the rest of the section to the crest occupied by the 3rd squad.

Lieut. A, as the section advances, moves forward to the crest and takes a position in observation in the edge of the wood.

The dispositions of the 1st section at this time are shown in Fig. 2, Plate 38.

As Lieut. A reaches the crest he notes that the enemy fire is weak and scattered. The right of the 2nd section is working cautiously up the hill. Lieut. A decides to move the 1st section forward by section rushes to the foot of the slope, and then assault the farm, using marching fire if necessary.

He signals: "Section rush." Sgt. X orders: "Cease firing, prepare to rush. Up." The section advances by short rushes to the foot of the slope up to the farm.

NOTE.—The section would open fire at the end of a rush if necessary to keep down the hostile fire. Otherwise it would advance without firing.

Demonstration 10. The Assault.

Lieut. A decides that the moment for the assault is at hand. He moves through the right of the 1st section, signaling to both sections: "Forward," and ordering the 1st section: "Forward. Marching fire."

Both section leaders, seeing the signals and actions of the platoon leader, move through their sections signaling and ordering: "Forward." The 1st section leader also orders: "Marching fire." The entire platoon closes on the farm.

The enemy machine gun is silent and only a few scattering rifle shots are directed at the platoon (from the farm), as it moves up the hill. The riflemen pause and fire from the shoulder as they see an enemy running or firing. The automatic riflemen have their rifles slung over their shoulders, ready to fire from the hip. As the platoon nears the house an automatic rifle opens fire from the window. All the automatic rifles of the platoon promptly direct their fire on it, silencing it immediately. Three men are captured in trying to gain the woods. Two enemy are found hiding in the house.

Demonstration 11. Reorganization and Resumption of the Advance.

Upon reaching the house, Lieut. A orders Sgt. Z, platoon sergeant: "Reorganize the 1st section south of buildings, 2nd section on slope of hill."

Lieut. A (who is in front of the 1st section) then orders: "Scouts and automatic riflemen of 1st section, follow me." He leads the men designated to the rear of the farm. All take shelter behind an outbuilding and haystack. Lieut. A orders:

"Allen and Burns (scouts), reconnoiter the edge of those woods, west of the farm (he points out the locality) to a depth of about 50 yards. Then remain in the edge of the woods in observation, covering our left. Benton and Grady (scouts), reconnoiter the edge of the woods to our front (pointing) in the same way, and remain in observation. Simmons and Watson (scouts), reconnoiter the edge of those woods to our right front (pointing), and remain in observation. Any questions? Move out, scouts. Thompson (automatic rifleman), take post near the northwest corner of that building (indicating the western building of the farm). Hopkins (automatic rifleman), occupy that shell hole (indicating a shell hole some 50 yards northeast of the farm)."

He notes: There have been four casualties in the 1st section, Corp. Q and three privates (one automatic rifleman, rifle grenadier, and one second in command).

He sees that the senior corporal is acting as section guide, that the 2nd in command in his squad is acting leader, and that a new second in command has been designated. The substitute automatic rifleman has replaced his principal, and has the weapon and full equipment.

One man has been shot through the leg and is in the draw at the foot of the hill. One man badly hurt in the chest is at the farm, two are dead back on the nose and one in the woods. The wounded are being given 1st aid. Both are in sheltered positions where they can easily be found. Lieut. A leaves them there. Pvt. Marcy, 2nd section, has been slightly wounded and has had a fainting spell at the house, but has now recovered.

Lieut. A places Marcy in charge of the five prisoners, and directs him to take them back down the unimproved road to the command post of the company, and then go on himself to the battalion aid station (he tells him where it is). He gives him the following written message to the company commander:

1st Plat.
(time)

To Capt. B (by runner).

Platoon reorganizing at farm in my zone of action. Seven casualties. Continue advance.

A, Lieut.

Lieut. A decides to continue the advance with his 2nd section in the first wave, relieving the outpost and returning it to the 1st section, in support. He orders: "Sgt. Z, collect the scouts and automatic riflemen on outpost. We continue our advance with the 2nd section as the first wave and the 1st section in support. Have the 1st section move out from the farm when the 2nd section has entered the woods (pointing). I am going with the 2nd section. We will continue our advance. The 2nd section will form the leading wave. Do you see that break in the trees on the sky line? That is on our line of advance and will be our direction point. Fourth squad base squad." He then orders: "Scouts out."

Lieut. A now disposes his runners as before, directs Sgt. Y to follow him at 50 yards with his section in line of skirmishers, and follows his scouts when they have gained a distance of 150 yards.

Comments.

Reference to artillery fire has been purposely omitted in this demonstration. Infantry, during this kind of a maneuver can do nothing to protect itself against artillery. The small infantry units, in the scattered formations in which they deploy for attack are not good targets for artillery. Therefore the artillery is unaimed fire. Unless it is very violent or in the nature of a barrage, assaulting infantry must disregard it. Infantry avoid, when practicable, features of the terrain which are apt to be subject to hostile artillery fire, such as roads or railroads, edges of woods, and especially cross roads and villages (known as "sensitive points").

Supports or reserves of attacking infantry are kept in covered and, if possible, defiladed areas. When under or in range of artillery fire they must be deployed in small units with sufficient intervals and distances so that one shell will not cause casualties in two units, in so far as this is possible.

Exercise 7. Sand Table Problem. Rifle Platoon in Attack, Open Warfare. (See Plate 39.)

NOTE.—This is an example of what are called *continuing problems*, in which a number of successive *special situations* are set forth. Each special situation is a logical development of those preceding, the *general situation* remaining the same.

Although the problem is continuous in that it is based on the same general situation throughout, each special situation and the requirements which follow, constitute a complete problem in themselves. As given to the students for solution, each special situation and the requirements should be issued on a separate sheet of paper, one at a time, successively. The students write their solutions on the same sheet, using additional sheets if necessary. A certain period is allowed for the solution of each situation, when the papers are collected by the instructor, and the next situation is handed out. This procedure is necessary, as any situation may include the solution for the previous situation, or so much thereof as is necessary.

Exercises of this kind may be varied by requiring the students to solve the problems of both sides, and of various leaders. Thus the first situation calling for a solution may be "special situation—Blue," the next "special situation—Red," and so on. The first situation may call for the actions of a company commander, the next for those of one of his platoon leaders, etc.

It is of course not necessary that all of the situations of a continuing problem be presented and solved in a single period of instruction. As each situation is complete in itself, the exercise may be extended over two or more days of instruction.

The following exercise, like all others in this text, is to be regarded merely as an example. Problems along similar lines should be prepared, or adapted from problems issued by the Service Schools.

This exercise may be given also as a demonstration, the successive positions of the troops being marked with pins, etc. on the sand table, as heretofore explained.

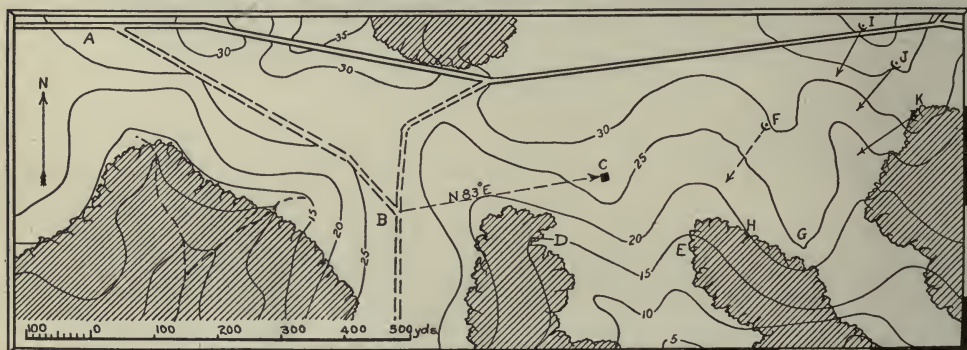


PLATE 39.—Sand Table Map.

General situation. The Reds (east) and Blues (west) are at war.

The territory shown on this table (Plate 39) is Red.

The Blues, having completed their mobilization more rapidly than the Reds, have taken the offensive and invaded the Red territory in several columns.

The advanced Red troops have been retiring slowly eastward for several days, offering a strong resistance to the vigorous advance of the Blues.

A number of advance guard actions have been fought by the Blues, in all of which they have compelled the Reds to retire, but have inflicted no heavy losses upon them.

Special situation 1. (Blue.) The 1st infantry, leading regiment of the 1st Blue brigade, is advancing east on the Red Bone Road, in close pursuit of the retiring Red forces.

The 1st battalion, with the 1st platoon of the howitzer company attached, forms the advance guard of the Blue column, preceding the main body by about 800 yards. The 2nd battalion, with regimental and brigade headquarters, is at the head of the main body. Order of march of the battalion: Detachment of Bn. Hqs., Cos. E, F, G, H, Bn. Hqs. (less detach.).

At 8.30 a. m., October 15, Capt. E, commander of Co. E, 1st Inf., at the head of his company, is at A on the Red Bone Road (Plate 39). For the last half-hour he has been hearing rifle fire from the front, which has steadily increased in volume.

For the last 15 minutes machine gun and some artillery fire have also been heard. The main body has just been halted by order of the brigade commander.

Capt. E reports to his battalion commander for orders. At 9 a. m. he returns to his company, and orders: "Platoon leaders and all non-commissioned officers except squad leaders report to me here" (at *A*).

His subordinates having reported, Capt. E, indicating on his map and on the ground the points to which he refers, issues the following verbal order:

"The enemy is in position across this road, less than a mile to the east. Our advance guard, the 1st battalion, is deployed north of the road, and already engaged with the enemy.

"The regiment will attack with the 1st and 2nd battalions, each supported by a platoon of the howitzer company, in the assault echelon and the 3rd battalion in reserve.

"Our battalion will be the right assault battalion, and will attack on a front of 600 yards, its left 200 yards south of the road, Cos. E and F in the assault echelon, each supported by one platoon of Co. H (machine guns), Co. G in reserve.

"This company will be the left and base company of the assault echelon, and will attack on a front of 300 yards, the 1st and 2nd platoons in the assault echelon, the 3rd platoon in support.

"The 1st platoon will be the left and base platoon of the assault echelon. Each platoon will attack on a front of 150 yards.

"The support platoon will follow the assault echelon at 200 yards, and will send out a combat patrol of 4 men to cover our left and maintain contact with the 1st battalion.

"The left boundary of the zone of action of the battalion and of our company is a line through the road junction on that country road, about 600 yards from here (pointing down the road *AB*, towards *B*), parallel to the Red Bone Road.

"Direction of attack, N. 83° E., parallel to the Red Bone Road.

"Line of departure, the country road running south from the junction (pointing out *B* on the map, and indicating its direction on the ground).

"Time of attack 10 a. m. The advance from the line of departure will commence on my signal.

"The assault platoons will be preceded by scouts. Each platoon will move independently to its initial position.

"Location of battalion aid station will be announced later.

"Prisoners to support platoon.

"I will be with the support platoon.

"Any questions?

"It is now 9.15. Set your watches. Move out in 15 minutes."

Requirement 1. The estimate of the situation, orders and actions of Lieut. A, leader of the 1st platoon of Co. E, up to 10 a. m.

Solution 1. Lieut. A carefully studies the captain's map, or his own, if he has a copy, and scans the terrain, using his field glasses. He estimates the situation confronting him as follows:

Mission. To move his platoon by the shortest and safest route to its departure position, and then complete the initial dispositions for the advance.

Enemy. The enemy is in position, evidently resisting strongly, as the advance guard was apparently not able to drive him out, and the entire regiment is to attack. The volume of fire, including machine guns and artillery, further indicates a strong defense. No hostile shells have yet fallen near at hand, but Lieut. A realizes that he may receive such fire at any instant, and that he should utilize such cover as the terrain affords in his advance. The enemy is not likely to be encountered during the march to the departure position. Lieut. A believes his superiors have selected a position where deployment may be completed prior to actual contact with the enemy's infantry.

Friendly troops. The 1st battalion is already deployed well to the left front. There will be other troops on Lieut. A's right flank, but no friendly troops in his front. During the attack Lieut. A knows he can count on the support of the accompanying weapons, but he is not greatly concerned with this just now. There will be an interval of 200 yards between Lieut. A's flank and the right of the 1st battalion. The company commander has ordered a combat patrol to operate in this interval.

Terrain. The terrain is rolling and partly wooded, as Lieut. A can see, both on the map and on the ground. The line of departure is on high and open ground, but there is a covered approach most of the way to it through the woods to the south of Lieut. A's position. There is also a road (*AB*) to the position, but this is an exposed route. The terrain in front of the line of departure is a succession of crests and valleys, wooded and open spaces, which must be skilfully utilized in the advance. Lieut. A will need direction points to guide his advance, especially as he is the base platoon of the assault echelon. He will select these on arrival at the departure position.

Courses open. Lieut. A might move to his position by the road. This is the shortest but most exposed route. He may also move in the edge of the woods to the south, where progress will be slower but cover better. There is plenty of time to reach the position.

Lieut. A may move in column of squads, with a squad as advance guard, in section columns or squad columns. A column of squads is not a safe formation when hostile artillery fire is possible. He may move in section columns, preceded by the scouts of the 1st section, or in squad columns each squad preceded by its own scouts. Section columns will be easier to control in this rolling country, especially in the woods. Squad columns should be used only if hostile artillery fire compels such a formation.

Lieut. A will plan his dispositions in the departure position when he arrives there.

Decision and plan of action. To move to the departure position through the edge of the woods to the south, in section columns, preceded by the scouts of the 1st section as advance guard. To move out at once, and to give the orders for his attack dispositions upon arrival at the line of departure.

Lieut. A orders: "Scouts of 1st section report. . . . Jones in charge. The enemy is in position across the road less than a mile to the east. Our battalion attacks south of the road. Our platoon is the left assault platoon. Our departure position is at the next junction, about 500 yards down this road (pointing down the road *AB*). We will move parallel to this road just inside the edge of those woods. Precede the platoon by 150 yards. Watch me for signals. Any questions? Move out."

To the platoon: "Section columns," and when the scouts are 150 yards in advance, "March."

Lieut. A leads his platoon in this formation over the route selected.

Upon reaching the point at which he must leave the woods, Lieut. A orders: "Halt," and signals "Halt" to the scouts.

Leaving the platoon in the woods under charge of the platoon sergeant, Lieut. A and his runners advance to the road. He orders Jones (scout): "Take a position in observation in front of the road."

Lieut. A examines the country to front and flanks. He notes a house (*C*) which has a bearing N. 83° E. from a point just south of the road junction (*B*). It will serve as a direction point for his advance. He orders Jones: "Leave two men in observation. Report to me with the rest of the scouts."

Lieut. A returns to his platoon and issues the following order so that all the men can hear:

"The enemy is in position about half a mile to the east. The 1st battalion attacks north of the Red Bone Road, our battalion attacks south. This platoon is the left assault platoon of the battalion. The second platoon is on our right, a combat patrol from the 3rd platoon on our left.

"We advance on a front of 150 yards, 1st section leading, 2nd section following at 100 yards, both in lines of squad columns at 40-yard intervals.

"The 3rd squad, left and base squad, will cross the road just south of that junction (indicating B,) and will advance N. 83° E., direction point a house. (Here Lieut. A makes sure that Jones, the left scout, knows the house.)

"Scouts will precede the advance by 150 yards.

"I will be at the head of the 1st section.

"Are there any questions?

"Squad columns, march."

As the leading section reaches the road Lieut. A signals the platoon: "Halt. Lie down." He moves to near the center of the platoon, locates company headquarters, and awaits Capt. E's signal to advance.

Comments. In the solution the actions and orders of Lieut. A are given in minute detail. This detail is of the utmost importance in the leadership of small units. It is necessary that the students should know exactly what Lieut. A does in the given situation and exactly the orders he gives to each of his subordinates. Careless or incomplete solutions are more harmful than otherwise. Clear thinking, clean-cut decisions, and short positive orders with no unnecessary words, are demanded.

The platoon sergeant, section leaders and guides have heard the company commander's orders. They therefore know all that Lieut. A knows of the situation. This is desirable as any one of them is a potential replacement for the platoon leader.

Lieut. A omits from his orders matters which are not essential to the proper functioning of the platoon. They are, for example, not greatly concerned with the battalion reserves, or the dispositions of the auxiliary weapons.

Special situation 2. Scouts preceding an assault platoon. At 10 a. m. Lieut. A receives and repeats back Capt. E's signal to advance, and orders and signals: "Forward," to his platoon.

Jones and Gregg are the scout and alternate scout of the 3rd (base) squad.

Requirement 2. a. A brief statement of Jones' duties in this situation.

b. His conduct in detail until he reaches the house (C).

Solution 2. a. 1. To move steadily forward toward the house.

2. To note all positions which might be occupied by the enemy, and continually watch such positions for indications of his presence.

3. To take advantage of any available cover, one scout covering the movements of the other.

4. When dangerous places to the front are observed from any covered position to signal, "Halt" to the platoon, this signal meaning: "You had better halt while I investigate."

5. To investigate the dangerous area and when certain all is clear, to signal, "Forward," and "Double time," if it is advisable for the platoon to cross an open space rapidly.

6. To select and occupy covered positions for the forward bounds of the platoon, if any are available.

7. To fire on the enemy with tracer bullets whenever he is seen, and to send word back to the platoon leader (by the alternate scout) if the tracers do not fully indicate the enemy's position.

8. If the enemy opens fire, to take cover, search out his position, and indicate it by tracer bullets, or message if necessary.

b. Jones moves rapidly down the slope, carefully watching the house and the woods to his right. He approaches the house while Gregg halts on the slope in a position from which he can cover Jones. Jones moves to the side of the house which Gregg is covering, looks through the window and signals, "Forward," to Gregg. He walks around the house, looking in all the windows and observing to front and both flanks. On approaching the house he has signaled, "Halt," to the platoon.

When Gregg reaches the house Jones enters it, Gregg remaining outside in observation. Finding the house empty Jones comes out, signals, "Forward" to the platoon, and continues his advance, using a new direction point in the right direction (in line with the house and the road junction or base squad—whichever is visible).

Comments. It is not the duty of this pair of scouts to investigate the entire woods to their right. They examine the north edge as they pass. Other scouts will investigate other parts of the woods.

Special situation 3. As Jones leaves the house he sees the 3rd squad in the valley to the west, and the 6th squad crossing the road. The remainder of the platoon is concealed by the woods.

Requirement 3. The further actions of the scout.

Solution 3. Jones says to Gregg: "Remain here where you can see me. I am going to that next ridge in front. Don't allow the platoon to leave the cover of this ridge until I signal, 'Forward.'"

Jones selects a prominent tree in the edge of the woods to his front as his next direction point. He then moves rapidly towards the next ridge to the front.

Special situation 4. As Jones moves down the slope several Reds appear over the crest in front and move towards the woods about 350 yards to the southeast. Gregg also sees them.

Requirement 4. Action of the scouts in this situation.

Solution 4. The scouts take cover and open fire on the Reds with tracer bullets. Jones realizes that Lieut. A and most of the platoon probably cannot see either the Reds or the tracer bullets because of the intervening woods. He therefore orders: "Gregg, report the enemy to Lieut. A."

Special situation 5. The Reds run forward into the woods. Gregg returns at a run to report to Lieut. A. Jones sees that Lieut. A has moved out of the woods (near *D*) and is advancing. The scouts on the right have passed the crest and are entering the woods (*E*).

Jones again starts forward. When he is 50 yards in front of the house a machine gun suddenly opens fire from the high ground to his left front (near *F*). He cannot see the gun.

Requirement 5. Actions of the scout in this situation.

Solution 5. Jones at once takes cover in a prone position, and searches the terrain to locate the position of the hostile machine gun. Having found it he immediately opens fire on it with tracer ammunition, in order to point out its location.

Special situation 6. Actions of platoon leader. Lieut. A, preceding his leading section by about 50 yards, has reached the front edge of the woods near *D*. The scouts are approaching the crest just in front. As they reach it Gray, scout of the center squad 1st section, signals: "Halt."

Requirement 6. Action of platoon leader.

Solution 6. Lieut. A orders the runner who is with him: "Black, to leader 1st section, when he reaches here. Halt in edge of woods until I signal, 'Forward.'"

Lieut. A then moves rapidly forward to the crest, where he halts in a covered position from which he can observe the terrain and the conduct of his scouts in front.

Special situation 7. As Lieut. A takes position at the crest the scouts of the left squad open fire. He sees their tracers pass behind the woods in front. Presently one of them starts toward him on a run, moving behind the crest. The center scouts are now about 50 yards from the wood (*E*).

Requirement 7. Action of platoon leader.

Solution 7. Lieut. A remains in position, observing the terrain and the conduct of his scouts through his glasses. The 1st section is held in the edge of the woods.

Special situation 8. Pvt. Gregg, alternate scout of the 3rd (left) squad, arrives and reports to Lieut. A: "We saw 8 Reds enter the woods there (pointing) from the high ground northeast. They ran when we fired on them. The range was about 350 yards from that house (pointing)." Gregg returns towards the house.

Lieut. A sees Jones (left scout) move forward from the house (*C*). Gray (center scout) has reached the edge of the woods (*E*), and is signaling, "Forward."

Requirement 8. Action of platoon leader, and a brief statement of the reasons therefor.

Solution 8. Lieut. A signals to his 1st section: "Forward." His mission is to push his advance with all possible speed. He is aware that there are Reds in the wood to his front (the ones fired on by Jones and Gregg), but they are probably only a patrol, as the center pair of scouts have signaled that the near edge of the woods is clear. There is a possibility of receiving fire from the high ground near *F*. The left scouts are moving forward but have not yet investigated this high ground. If there be any enemy there the scouts will probably draw their fire before the leading section has advanced beyond the ridge between *D* and *E*, the rear slope of which will afford cover to the troops in a prone position. The mission of the Blue army as a whole is aggressive, it has the initiative and is attacking. Lieut. A must move forward whenever possible, and the present situation calls for a continuation of his advance.

Special situation 9. As the 1st section reaches a line 50 yards in advance of the woods in rear of Lieut. A, he starts forward towards the next wood (*E*). As he does so a machine gun opens fire from his left front (near *F*).

Requirement 9. Action of the platoon leader.

Solution 9. Lieut. A takes cover immediately in a small depression near the crest (between *D* and *E*). He sees the leading section run forward to the shelter behind the crest and lie down. The 2nd section is still in the wood in rear.

Lieut. A, with his glasses, watches the action of his left scout (Jones) to see if he locates the machine gun. He also searches the ground from which the firing appears to come, in an effort to see the gun himself.

Special situation 10. The leader of the 1st section approaches Lieut. A and reports: "We didn't lose any men. The gun cannot reach us now."

Lieut. A sees his left scouts (Jones and Gregg) fire tracer bullets at a point on the high ground to his left front (*F*). Searching the locality thus indicated with his glasses Lieut. A picks up a machine gun firing from a partially concealed open emplacement on the forward slope, just below the crest (near *F*). He hears a few shots in the woods to his front.

Requirement 10. Lieut. A's estimate of the situation, his orders and actions.

Solution 10. Lieut. A's mission remains unchanged. He must push forward as rapidly as possible, breaking down any hostile resistance that he encounters.

The enemy opposing his advance thus far consists only of the machine gun, which he has now positively located, and a patrol probably of 8 men only, in the woods to his front. Lieut. A's scouts are in the woods, and should be able to hold this patrol in check.

The hostile machine gun sweeps at close range the ground over which Lieut. A's platoon must advance. It must be put out of action before the advance can continue. It also sweeps part of the terrain over which the 2nd platoon on Lieut. A's right, must advance.

At present Lieut. A's troops are all under shelter—the first section on the reverse slope of the ridge, the second section back in the woods. There is a combat patrol of 4 men on Lieut. A's left, who may also be expected to engage the hostile machine gun.

Lieut. A might request aid from the accompanying weapons. He will do so if his own efforts prove ineffectual, but the fire of his leading section alone should be sufficient to put out one machine gun at short range, in an open emplacement which can be seen. Of course there may be other guns which will open presently, but there cannot be any in a position to inflict serious damage on Lieut. A's platoon so long as it remains under cover of the ridge and the woods.

Lieut. A decides to have the 1st section attack the hostile machine gun with fire from the crest.

He orders the section leader, who is with him, as follows: "Range 300. Target, machine gun indicated by tracers of left scouts. Fire at will."

Lieut. A remains in his position (on the firing line) and observes:

- a. The fire of his leading section.
- b. The hostile machine gun.
- c. The woods to his front, in which occasional shots are heard.

Special situation 11. After a few minutes heavy and well-directed fire by the 1st section the hostile machine gun is silent. Its crew attempts to retreat, taking the gun with them. Several are killed and the remainder abandon the gun and run to the woods in rear.

Lieut. A signals, "Forward," to the leader of the 1st section. As fire ceases the scouts of the 3rd squad, who have been under cover in the low ground east of *C* during the firing, advance up the slope at a run.

The 2nd and part of the 1st squad advance to the woods (*E*) already occupied by their scouts. They continue through the woods, driving out a few Reds, some of whom are killed while crossing the open ground to the northeast (*G*).

The 2nd section advances to the crest just vacated by the 1st section.

Lieut. A accompanies the advance of the 1st section to the northeast edge of the woods, near *H*. As he reaches this point he sees Jones (scout of the 3rd squad) from a point near *F*, signal, "Enemy in sight." He and Gregg then commence firing tracer bullets to their front and left front. Heavy hostile rifle and machine gun fire now open from the front and left front.

Requirement 11. Action of the platoon leader.

Solution 11. Lieut. A signals, "Halt," to the platoon. He moves rapidly forward to the line of scouts (on the crest *GF*), where he can personally reconnoiter the ground to his front.

Special situation 12. Following the tracers of his scouts, and using his glasses, Lieut. A sees a line of fox holes along the crest (*IK*) and in the near edge of the woods to his front. He locates two light machine guns firing rapidly from open emplacements at *I* and *J*. There is a third gun which he cannot see, in the woods near *K*.

All of the scouts are on the crest, firing tracer bullets at the enemy. The 1st section is lying down in the low ground, about 100 yards in rear of the line of scouts. The section leader has moved up the reverse slope within speaking distance of Lieut. A.

Lieut. A estimates that the enemy to his front and left front (as far as *I*), are about two platoons. The 2nd platoon is firing from the edge of the woods to the south.

Requirement 12. Lieut. A's estimate of the situation, his orders and actions.

Solution 12. Lieut. A's mission remains unchanged by the developments of the situation.

The enemy in his front is intrenched and offering a determined resistance. His strength is probably greater than Lieut. A's. Certainly he has more fire power at his disposal, in particular at least 3 machine guns. The range is short—only 200 yards from the crest *FG* to the hostile position.

The troops on Lieut. A's right are apparently heavily engaged. Nothing is known as to the situation on the left.

The crest *FG* affords a good fire position for Lieut. A's platoon. It can be reached without great exposure to hostile fire. The low ground in rear and the woods afford good cover. But an advance from this position is not possible until the hostile machine guns are silenced.

The fire position on the crest *FG* is subject to enfilade fire from the southeast, through the open space between the woods. Lieut. A's only protection against such fire is afforded by the activity of the friendly troops on his right (Co. *F*).

The enemy's strength is so great that Lieut. A will certainly have need of the combined fire power of his two sections, and probably also of help from the accompanying weapons. Although there is a maneuver interval of 200 yards between the

left of Lieut. A's zone of action and the Red Bone Road, the enemy's dispositions are such (his front being continuous up to and beyond the road) that no opportunity for enveloping tactics is afforded. There is no opportunity for maneuver on the right, but this flank is protected by the 2nd platoon. There is room for Lieut. A to deploy both his sections on line, the second section on the left of the first, in the maneuver interval.

Lieut. A decides:

a. To make a frontal attack on a front of about 300 yards, with both sections in line, the 2nd on the left.

b. To notify his company commander of the situation and of his plans, and especially of the presence of the hostile machine guns. The company commander may then take such steps as he deems necessary to support Lieut. A by calling for fire from the accompanying weapons, and by use of the support platoon.

Lieut. A orders the leader of the 1st section: "Build up on line of scouts. Range 200. Target, enemy infantry in fox-holes and machine gun in edge of woods (pointing). Fire at will. The 2nd section will attack on your left. Any questions? Move out."

Lieut. A then gives the following order to the platoon sergeant, who has joined him: "The enemy has about 2 platoons and at least 3 machine guns intrenched in the edge of that woods and along the crest to beyond the Red Bone Road (pointing). Do you see them? You have heard my orders to the 1st section. Place the 2nd section in line on the left of the 1st and attack the enemy on the ridge between the woods and the Red Bone Road."

To his runner Lieut. A says: "Black, take this message to Capt. E, and point out our target." The message is as follows:

1st Plat., Co. E.
(time)

To C. O. Co. E (by runner).

Enemy in woods to my front and on ridge to left front hold up advance. Estimate one company and three machine guns. Am attacking with both sections in line.

A, Lieut.

Lieut. A moves to the left, behind the crest, to a point where he can see the entire hostile position and both of his sections. Here he observes the conduct of his command, the enemy, and the fire effect of both sides.

Special situation 13. Lieut. A's entire platoon is in line and firing on the enemy. He notes a number of casualties on the right of his 1st section. The hostile rifle fire from the woods at that point is not heavy and does not seem sufficient to produce the casualties noted. Lieut. A sees bullets strike the ground immediately in rear of him. He believes that he is receiving enfilade fire, probably from a machine gun to his right, in the zone of action of Co. F, and that this fire is causing the casualties in his 1st section.

Requirement 13. Action of platoon leader.

Solution 13. Lieut. A studies the ground to the southeast with his glasses, endeavoring to locate the hostile machine gun. He is unable to do so.

To his runner Lieut. A says: "White, there is a machine gun over there (pointing) which is firing on us. I cannot locate it, but it is probably in the edge of that little wood about 500 yards from here (pointing to a wood not in limits of map). Take this message to Capt. E, and point out where I think the gun is located. Any questions? Move fast."

The message is as follows:

1st Plat., Co. E.
(time)

To C. O. Co. E (by runner).

Machine gun fire from right front causing losses. Request gun be put out.

A, Lieut.

Special situation 14. Lieut. A receives the following message from his company commander:

Co. E,
(time)

To C. O. 1st Plat. (by runner).

Enemy withdrawing on front of 1st battalion.
Have requested machine gun and howitzer fire on your target.
F Co. requested to put out machine gun to your right front.
Push the attack when enemy breaks on your front.

E, Capt.

A little later Sgt. Q commanding a light mortar section, and Lieut. H of the machine gun company, join Lieut. A. He points out the hostile works in his front, including the machine gun emplacements.

Presently friendly machine gun fire opens in the interval on Lieut. A's left. Lieut. H, observing the fire, adjusts it by runner and signal.

A light mortar bomb falls just short of the hostile machine gun at K.

The hostile fire slackens, and several Reds are seen to leave their fox holes and break to the rear. Blue machine gun and mortar fire continue.

Requirement 14. Lieut. A's estimate of the situation, his orders and actions.

Solution 14. The mission is unchanged.

The enemy is retreating on the left. The hostile troops in Lieut. A's own front are badly shaken by the fire of the platoon and of the accompanying weapons. That they are near the breaking point is indicated by the slackening of their fire and individuals moving to the rear.

Lieut. A believes that the moment for the assault is at hand, but his platoon is as yet too far from the enemy's position (200 yards). In advancing they move into lower ground, and the fire of the accompanying weapons can support the movement until just before the assault.

Lieut. A decides to advance his firing line, under cover of this supporting fire, to a position close enough for assault. He informs Lieut. H and Sgt. Q of his decision.

Lieut. A signals to his section leaders: "Squad rush," pointing to the left.

He continues in observation, watching the conduct of fire and movement by his two sections.

Special situation 15. Both sections of the platoon have advanced by squad rushes to within 100 yards of the hostile position, which can now be plainly seen. There are no entanglements on its front. Hostile rifle fire from the woods has almost ceased. Red troops continue to leave their fox-holes, one or two at a time, and to break to the rear. The light mortar, by well-directed shots, has put out two of the hostile machine guns, and greatly shaken the infantry. Little firing is heard from the flanks, especially to the north. Lieut. A is still observing from the crest, and Lieut. H and Sgt. Q are near him.

Requirement 15. Lieut. A's estimate of the situation, his orders and actions.

Solution 15. Lieut. A's immediate mission is now to assault the hostile position in his front.

The enemy to the north is retreating. Resistance on the south has also slackened. The enemy in front of Lieut. A is badly shaken and is breaking. Lieut. A believes they will not repulse a determined assault and that counter attack is unlikely.

The platoon is within 100 yards of the enemy, still supported by the fire of the accompanying weapons. This fire must cease as the assault is delivered.

The assault must be made up-grade and into a wood on part of the front, but there are no artificial obstacles.

The distance still to be covered is rather great for a single rush, but Lieut. A believes that a prompt advance, with marching fire, will enable him to over-run the enemy with few casualties.

Lieut. A orders Lieut. H and Sgt. Q: "I am going to assault. Cease firing." To his section leaders he signals: "Fire faster." To the men with him (platoon sergeant and runners): "Follow me."

As the fire of the accompanying weapons ceases, Lieut. A rises, moves rapidly forward through the center of his platoon, signaling and ordering: "Forward, marching fire," and leads the assault on the hostile position.

TWENTIETH LESSON.

DISPOSITIONS AND PLANS OF THE DEFENSE.

The general principles of defensive combat and the tactical methods of the defense have been outlined briefly in the introductory part of this course.

The tactics of the defense are treated in great detail in the early lessons of the course in Field Engineering, and in the lesson on conduct of fire in the defense, in the course in Musketry. These lessons should be reviewed as a preliminary to or in connection with the further study of defensive tactics which follows:

Methods common to attack and defense. Many of the details of defensive combat are similar to those of the attack; for example the selection of command posts, the organization of message centers, the use of runners and other agents of communication, etc. Due to the fact that, except in retreat, the force remains generally stationary, the problems of supply and intercommunication are usually easier than the corresponding problems of the attack. A more extensive use is made of the telephone and other methods involving fixed installations and of pyrotechnics; but for the small infantry units in the front line the means of intercommunication chiefly employed are the same as in the attack, *i. e.*, spoken command, signal and runners.

The employment of auxiliary and accompanying weapons, except machine guns, is in general the same in defense as in attack. Accompanying guns from the artillery are used for close defense, as anti-tank weapons, and to support counter attacks.

Machine guns constitute a most important element of the defense. Their employment is discussed in detail in the course in Field Engineering and later in the present course.

Influence of Organization on Defensive Tactics.

Organization is based primarily on the requirements of offensive combat, and has been discussed in connection with that subject. The same organization serves also for the defense; the relations of the different units, their leaders and staff, the hierarchy of command, the weapons and equipment, are the same in defense as in attack. The defense in fact is to be regarded merely as a phase of combat, and not as a method of warfare distinct in itself.

Defensive tactics must accordingly conform to the organization in force at the time. The defense should be abandoned and the attack resumed whenever the situation warrants, and the organization cannot be changed or disrupted to meet the special needs of the defense. The principle of the integrity of tactical units applies to defense as well as attack, and the disruption of units or the segregation of specialists, such as automatic riflemen or rifle grenadiers in groups, is prohibited. Squads, sections, platoons, etc., should act as units under their proper commanders. Tactical unity is almost as important in defense as in attack.

Relation of Field Fortification to the Defense.

The study of Field Fortification which precedes defensive tactics, should give the student no false ideas as to the importance of that subject. A proper defensive organization is based not upon works of field fortification, but upon a *proper distribution of troops* in accordance with the recognized principles of defensive combat. The works of field fortification are an accessory device to increase the powers of resistance of the troops occupying them. They should conform to the distribution of troops, and not the reverse. Even where defensive works are already in existence they should not be allowed to dictate the distribution of troops, but if necessary

should be altered to conform thereto. Works of defense serve to increase the powers of resistance of the troops or to decrease the numbers required. If intelligently used, therefore, works of field fortification add to the mobility and initiative of the defense by providing stronger reserves. If not intelligently used fortifications may merely tie the defender to the ground, depriving him of his initiative.

DISPOSITIONS OF TROOPS IN DEFENSE.

The details of the dispositions of troops in defense will of course vary considerably with the tactical and strategical situation and with the terrain.

Frontal Fire vs. Organization in Depth.

If the attacker be equipped with a powerful artillery, plentifully supplied with ammunition and capable of executing a destructive bombardment, the defender must conceal his dispositions and distribute his troops and defensive works over the terrain to evade the effects of such bombardment. In particular the forward portion of the defensive zone which will be especially subject to artillery fire, cannot be heavily manned. The defender thus has recourse to distribution or organization in depth. With the forward zone thus lightly held it is certain to be penetrated by a heavy attack, which must be resisted by close-in defense, in all directions if necessary, and by counter attack—further reasons for distribution in depth. Such dispositions will be especially characteristic of stabilized warfare, which permits a massing of artillery.

A wide field of fire (to the front) is desirable. But its advantages may be outweighed by other considerations. If it involves undue exposure to hostile observation, causing the position to receive a heavy fire of artillery, it may be better to partially sacrifice the wide field of fire in favor of a position with a more restricted field, but better protected from hostile observation and fire. The sacrifice of frontal fire is compensated by an effective organization for the development of oblique and flanking fire, especially by the automatic weapons.

If the attacker be poorly equipped with artillery, or if the nature of the operations is such that a massing of artillery for a preliminary bombardment is impossible, there will be less occasion for distribution in depth. In this case the defender will occupy a zone of less depth, his forward defenses may be and will be more heavily manned, and he will endeavor to break up the attack by a strong development of frontal fire before it reaches the defended zone. Such dispositions will be especially characteristic of highly mobile warfare, in which heavy concentrations of artillery fire are impracticable.

If the terrain affords a wide and favorable field for the frontal fire of the defense, without undue exposure, the defender will strongly man his forward lines and endeavor to break up the attack by frontal fire. If, on the other hand, the field of fire is greatly restricted, allowing the attacker to approach under cover, the defender must again have recourse to close-in defense, including flanking fire of automatic weapons and counter attack; and organization in greater depth will again be demanded.

If the purpose of the defender be solely to delay the attacker and not to seek a decision, a shallow distribution, affording a good field for frontal fire at medium and long ranges, will be appropriate. Often the defense will consist of a single line of riflemen and automatic weapons, in a terrain affording a wide field for frontal fire. Such dispositions will be especially characteristic of delaying and rear guard actions in mobile warfare.

We thus see that, depending on the nature of the attack (whether or not accompanied by a heavy artillery bombardment); the nature of the terrain (whether or not affording a favorable field for frontal fire); and the mission of the defender (whether or not he seeks a decision); the defensive organization may vary from a single line delivering frontal fire, to a position or several successive positions, organized in great depth and capable of resistance throughout that depth. (See Field Engineering, also Plate 40.)

In any case the defender will avail himself of frontal fire to the extent that conditions permit. But inasmuch as fog or darkness or an effective rolling barrage may enable the attacking infantry to approach close to or actually reach the defender's position, reliance in a decisive action should never be placed upon frontal fire alone, however favorable the conditions, and organization in greater or less depth will be called for, with an active defense by counter attack.

To recapitulate then, organization in depth is characteristic of stabilized warfare involving close contact of the opposing forces and intensive artillery fire, terrain unfavorable for frontal fire, and decisive actions. A shallower organization is characteristic of open warfare in which intensive artillery fire is lacking, terrain especially favorable for frontal fire, and actions in which a decision is not sought.

In all cases the defender will strengthen his position by works of field fortification to the extent that time and facilities permit, and the situation warrants.

Dispositions of the Battalion in Defense.

The combat unit, in defense, as in attack, is the infantry battalion. Its organization and armament have been discussed in connection with the attack. They remain unchanged in the defense.

Centers of resistance. The battle position on a defensive front is garrisoned by a certain number of "front line battalions." Each is responsible for the defense of a definite portion of the front, which is called the battalion sub-sector. The width of this sector may vary from about 600 yards to about 1600 yards or more in some cases, according to the terrain, the situation, etc., 800 to 1000 yards being about an average. The battalion is deployed in depth, that is from front to rear, the area occupied being called its center of resistance.

Combat and reserve echelons. Within its center of resistance the front line battalion is disposed in two echelons called the combat and reserve echelons. These correspond to similar echelons in the attack. The combat echelon is charged with the duty of garrisoning the small tactical areas in the forward part of the battalion area, which meet the shock of the attacker's onslaught. The reserve echelon is held mobile in rear of the combat echelon, on the line of battalion reserves, for reinforcement, and especially for counter attack against any enemy who may penetrate the area defended by the battalion. The trains, kitchens, battalion aid station, etc., are established in rear of the line of battalion reserves, as in attack. (See Plate 27.)

In conformity with the principle of the integrity of tactical units the combat and reserve echelons each consist of a number of complete companies. A typical distribution would be two rifle companies in the combat echelon and one in reserve. If the front to be held is narrow or the field for frontal fire restricted, one company only may be placed in the combat echelon and the other two held in reserve. This would be exceptional.

The machine gun company may be held intact, but will usually be distributed throughout the combat echelon, as described in detail in the course in Field Engineering.

Strong points. Combat groups. That portion of the battalion center of resistance occupied by the combat echelon is further divided into sub-sectors and areas assigned to the rifle companies of the combat echelon. These areas are known as strong points. Each strong point consists of two or more small areas garrisoned for passive defense and known as combat groups, and a small mobile support for reinforcement and local counter attack. A combat group usually resists by fire alone, but may include a small support for reinforcement and even for counter attack.

These various defensive areas are adjusted to the terrain in such manner as to be capable of defending their own fronts and flanks, supporting adjacent areas and covering the unoccupied portions of the terrain. The garrison of each area, small or large, is responsible for the integrity of that area.

Typical lines of a defensive position. The combat groups are usually disposed in two lines, known as the firing line and support line, and these, with the line of battalion reserves, constitute the essential lines of a typical center of resistance. The mobile supports of the companies in the combat echelon are usually held on or near the line of supports. (See Field Engineering.)

Unless there be good observation from the firing line, a line of observation is established in advance of the position. It is occupied by lookouts or small outguards.

The Outpost Position.

If there be an outpost position in front of the battle position as a screen for the latter, the larger units (regiment and brigade) will habitually be deployed over both positions, that is they will furnish the garrisons for both the outpost and battle positions. The smaller units, from the battalion inclusive down, are deployed in one position or the other, but seldom in both. If, however, the outpost consists simply of a line of observing groups a short distance in front of the battle position, these groups may be furnished from the reserve companies of the battalions holding the battle position, from the supports of the companies in the combat echelon, or even from the front line platoons.

Garrison of the outpost. The garrison of the outpost position, if such there be, should be of a strength appropriate to the mission of the outpost. If it be decided to offer a determined resistance in the outpost with the intention of slowing up the attack before it reaches the battle position, the outpost should be strongly garrisoned and should include machine guns and other auxiliary weapons. If the mission of the outpost be solely that of screening the battle position from hostile observation, patrols and raiding parties, its garrison would include only small groups of infantry with perhaps a few machine guns, and its distance in front of the battle position would be less.

On a stabilized front the outpost position will frequently be in immediate contact with the enemy.

Defensive dispositions independent of field fortifications. It will be noted that all of these dispositions are independent of any works of field fortification, though not of the terrain. The dispositions of troops having been effected, their positions are strengthened by works of field fortification to the extent that the situation demands or time and facilities permit.

The details of location of the various areas and lines are covered in the course in Field Fortification, and are indicated in diagrammatic form in Plates 21 and 40.

Summary of the Dispositions of a Front Line Battalion in Defense.

We have now seen that the forward or combat portion of a defensive position is ordinarily held by a number of battalions deployed in line abreast of each other. Each such battalion is in two echelons, combat and reserve, or holding and counter attack; each including one or more complete rifle companies. Each company in the front line or combat echelon, is likewise disposed in two echelons, combat and support, each consisting usually of one or more complete platoons. The platoons in the combat echelon of the front line companies are each assigned as garrisons to one or more combat groups. They may be employed entirely in passive defense, or a platoon may hold not to exceed one section as a mobile support for reinforcement and even for counter attack.

Depending upon the terrain and the tactical situation the combat echelon of the front line companies may consist of one or generally two lines of defended areas or combat groups, called the firing line and the support line. The mobile supports of the company are held on or slightly in rear of the support line. Thus a front line platoon deploys in one or two lines, a front line company in two lines, and a front line battalion in three lines—in addition to a line of observation in front of the firing line, if such be established.

The usual distances between these characteristic lines are indicated in Plate 40. They depend upon the terrain, the intensity of hostile artillery fire, and the requirements of mutual support and defense in depth, especially counter attack. These considerations are discussed in detail in Field Engineering.

Each unit, from a combat group to a battalion, is responsible for the defense of a definite area.

By this system the integrity of tactical organizations and unity of command in defense is preserved.

Deployment not uniform. Though units are held intact under the control of their proper leaders, troops in defense are never deployed uniformly across the front of the position, but are disposed in small groups by platoon, section or squad, in the localities favorable for the development of effective fire, in such manner as to cover the front and defend the unoccupied intervals. During the course of the combat they may be shifted about as the situation demands.

Progressive orders for deployment. In the distribution of troops for defense each superior unit will, as a rule, prescribe the general dispositions of the next subordinate units only. Thus the division would indicate the front or sub-sector to be defended by each brigade, and the approximate position of the firing line, but would seldom prescribe the dispositions of the regiments within the brigades, this being left to the brigade commanders. From the front assigned and his knowledge of the general tactical and strategical situation, the brigade commander would decide whether to place one or two regiments in line. The division commander would also, of course, indicate whether or not an outpost position was to be prepared, its approximate location, and perhaps the proportion of available infantry to be assigned to its garrison. He would also indicate the extent to which both positions were to be organized by the construction of works of field fortification.

The battalion commander assigns companies to the combat and reserve echelons, assigns a front to each first line company, indicates quite closely the position of the firing line and support lines, and the extent of the organization. He would seldom prescribe the dispositions of platoons, but may of course do so if in his judgment this is necessary.

The company commander assigns his platoons to combat and support echelons, and prescribes the number of combat groups to be organized and the approximate location of each. He indicates the organization to be effected, the order of priority of work, and the assignment of troops thereto.

Platoon leaders trace the works of defense on the terrain, organize the working parties and supervise the construction.

Reports to superior commanders. Each commander of a company or higher unit will receive from his next immediate subordinates reports, usually accompanied by sketches, of the dispositions effected as a result of his orders. During the progress of the work he will make frequent inspections to assure himself that it is being properly carried on, and may require progress reports from his subordinates. He co-ordinates the work of the next lower units and co-operates with neighboring units on his flanks in order to insure continuity of defense.

Fire and Movement. Mobility and Initiative in Defense.

The active defense is characterized by movement as well as fire, the movement taking the form of counter attack. If too large a proportion of the available troops be assigned to garrison the tactical areas for passive defense (by fire alone), the defender sacrifices all opportunity for seizing the initiative and "ties himself to the ground." Such a supine attitude will not achieve victory in the face of a determined attack. If his defenses are over-run the defender's resistance is at an end.

Relative strength of garrison troops and reserves. For the active defense the number of troops assigned to garrison tactical areas should be as small as possible, and supports and reserves as strong as possible. The increase in the accuracy and

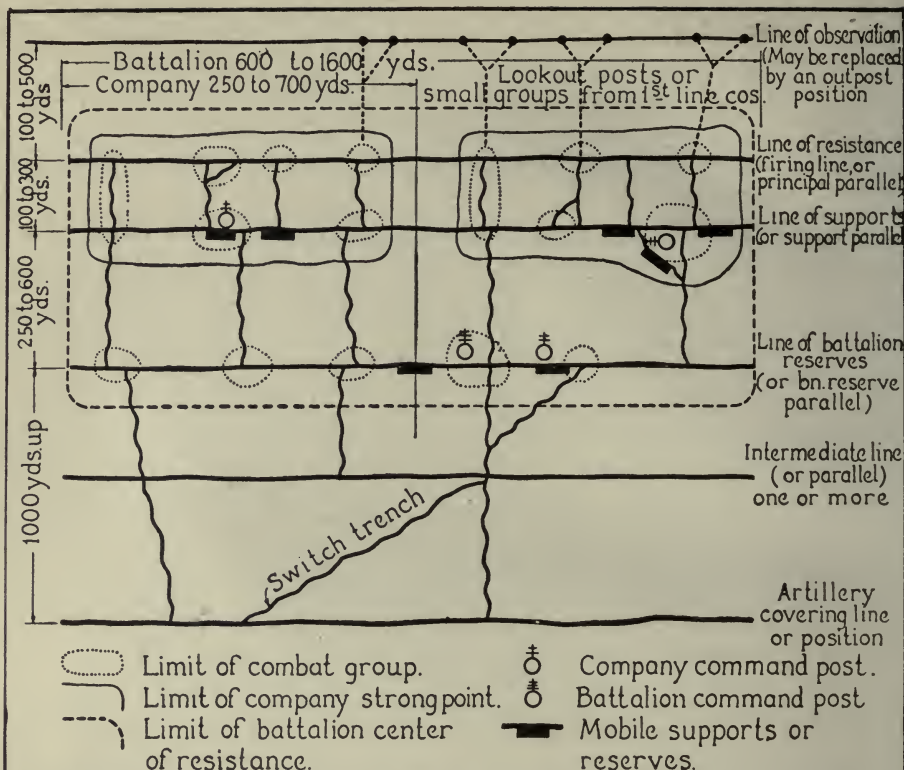


Fig.1 RIGHT LINE DIAGRAM OF A DEFENSIVE POSITION
Showing typical relations of parallels, approaches and defensive areas; and an example of the distribution of a battalion of infantry. (Machine guns not shown)

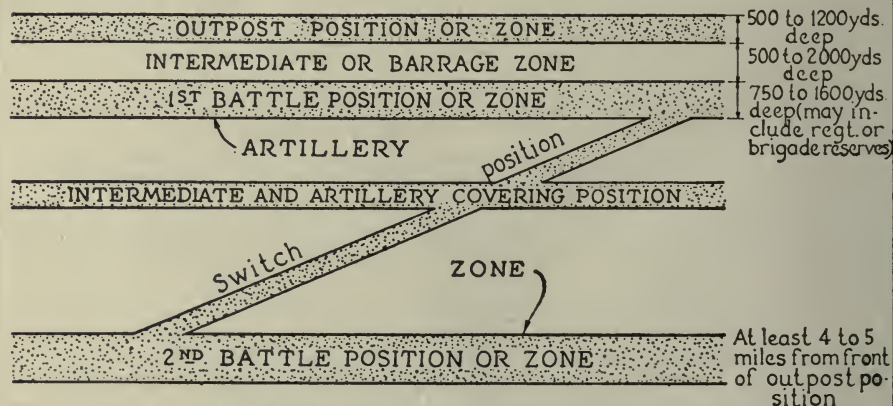


Fig.2 RELATION OF SUCCESSIVE POSITIONS ON AN ORGANIZED FRONT
(These figures are not drawn to scale.)

rate of fire of the rifle, the development of automatic weapons, intelligent distribution of troops, a knowledge of the terrain, and the proper use of field fortifications, enable a small number of men to deliver a great volume of well-directed fire, thus leaving the maximum number of troops available for the active defense. The reinforcement of a position to resist an impending attack should usually be made by increasing the strength of the general reserves, rather than that of the garrisons of tactical areas.

Value of reserves in defense. When the battle is on it is by the use of his reserves alone that the commander can influence the course of the action. This important principle is as true in defense as in attack. In an active defense the commander may profit by the advantages of mobility, initiative and surprise to a degree at least comparable to that enjoyed by the attack. If the defense be passive the initiative remains absolutely with the attack. Reserves in hand give to the defense the power of maneuver, mobility, elasticity, and the opportunity to seize the initiative. In a purely passive defense, as a delaying action, strong reserves are of course not required.

The Counter Attack.

We have made frequent references to the counter attack as the characteristic feature of an active defense, that is a defense which seeks a decision.

This feature of the defense should be developed to the utmost, both locally and on a large scale.

The defender, having had opportunity to provide shelter for his troops and otherwise organize the terrain, and being able to deliver a more effective fire in proportion to his strength, will suffer fewer losses than the attack, and will be able to economize his forces.

The defense will thus be enabled to provide strong supports and reserves for the active measures of counter attack. These reserves may be held under cover, at favorable localities, their numbers will be unknown to the enemy, and opportunities for surprise attacks in unexpected strength will be afforded.

Strength of reserves. A front line platoon may hold a portion of its force mobile for counter attack. All larger units habitually retain from $\frac{1}{3}$ to $\frac{2}{3}$ of their force for this purpose. Counter attacks are accordingly delivered both locally and generally. Successful local attacks pave the way for attacks on a larger scale, and an eventual resumption of the offensive, which should always be contemplated by an active defense.

The element of surprise. Counter attacks should always be delivered as a surprise, and are naturally most effective when directed against a flank of the attacker, or taking the form of an envelopment. They should be supported by the fire of all combat groups which are in a position to afford such support, and by the auxiliary weapons. Counter attacks on a large scale may be prepared and supported by artillery in the same manner as the attack.

Most favorable opportunities for counter attack. The best time to deliver a counter attack is when the attacker has been checked by the passive resistance of the defense or by counter attack on a smaller scale; prior to or during the reorganization of his scattered forces following an assault; or against units which have advanced beyond their neighbors, thus separating themselves from their supporting troops and exposing their flanks.

It will usually be better to counter attack a hostile unit rather than to reinforce the troops offering passive resistance. The counter attack should be launched from close range by troops under cover, and whenever possible against the hostile flank.

Organization to facilitate counter attack. The distribution of troops in defense and the organization of the terrain should be such as to favor counter attack. Counter attack troops should be close at hand, utilizing such natural places of departure as ravines, hollows, reverse slopes or woods. If no natural cover is available at the proper place, artificial cover and concealment is provided. Approach

and switch trenches are used as lines of departure. Obstacles in the interior of the position should be so disposed as not to unduly interfere with the play of counter attack. Gaps through the obstacles are provided for the passage of counter attack troops when necessary. These gaps should be blinded or closed by portable sections. (See Field Engineering.)

Cover, concealment and good communications for the reserves are essential.

Counter attacks planned in advance. The counter attack plans of the smaller units may be and should be considered in advance, at least tentatively. Arrangements for counter attack to meet various possible developments should be made, and when opportunity affords these may even be rehearsed, the troops passing over the terrain on which they will operate. When the anticipated situation is at hand the counter attack may be launched promptly without the loss of time involved in formulating detailed orders. A simple order as: "Attack down the ravine," or even a signal, will be sufficient to launch a counter attack whose details have been worked out in advance. The counter attack on a small scale thus becomes almost automatic.

The counter attacks of larger units cannot so readily be prepared in advance in all their details, though many preliminary arrangements may be made. The rule for an active defense may be stated as follows:

Rule for the active defense. a. Hold the assigned front with the minimum number of troops, by effective dispositions and good works of field fortification. b. Maintain large reserves under cover at favorable localities and be constantly on the lookout for opportunities to make aggressive use of them. c. Exploit every successful local counter attack by following it up with an attack on a larger scale.

Orders.

Orders for the defense, like those for the attack, are usually issued to meet each phase. They follow in general the standard forms heretofore described, so far as possible.

The initial orders for the occupation of a defensive position recite the necessary information concerning the enemy and the friendly forces, the plan of the command as a whole—"to take up a defensive position," or to "organize and defend (or hold) a position," for certain purposes. The distribution of troops, both laterally and in depth, is then prescribed, with the combat mission of each unit. This will usually be: For the infantry units, to defend each a certain front called their sub-sector; for the auxiliary arms, to support certain infantry units or fire on certain designated areas. The location of the defensive position or positions, and of the various lines thereof, and the extent to which the organization of the ground is to be carried are prescribed in necessary detail. These orders will be progressively more in detail as the size of the units decreases.

As is usual in every case of orders, the defense orders of the larger units prescribe the missions of their next subordinate units only with, as a rule, no details pertaining to any lower units.

The form and contents of the defense orders of the small infantry units are discussed in the lessons following.

Defense Plans.

One of the great advantages enjoyed by the defense is the opportunity afforded by its relatively stable position to plan its operations in great detail in advance.

Every unit, down to include the squad, prepares a "Plan of defense," in which every probable or even possible development of the attack is foreseen and provided for.

This plan covers in necessary detail everything pertaining to the defense of the sector occupied by the unit. A company defense plan gives the missions and combat posts of platoons or combat groups, but not of the squads composing these groups. A squad defense plan prescribes the combat post and mission of each individual.

Defense plans of large units. The plan of defense in its entirety will seldom be included in the initial defense orders, except in the case of a position to be occupied for immediate defense. The defense plans of a large unit will include multitudes of maps, displayed on the walls of headquarters or filed in drawers, artillery barrage schemes, charts of artillery objectives, plans of circulation and movement of traffic, intelligence charts of hostile dispositions, maps of defensive organization, all kept up to date by continual additions and alterations, tables, detailed plans of all kinds, instructions, regulations, bulletins and memoranda, schemes for troop movements and supply, dispositions of medical units, sanitary regulations and plans for the care of the sick and wounded, plans of inter-communication and signal codes, charts of the activities of the hostile air forces, locations of searchlights and anti-aircraft defenses, detailed plans for raids We will content ourselves with this rather confused view of the intricate defense plans of a large unit, concerning which volumes have been and will continue to be written. In this course we are concerned only with the defense plans of the small infantry units.

Defense plans of small units. The defense plan of a small unit may be and probably often is carried in the head of its leader. In a position which is occupied for a considerable period, however, the frequent relief of units in the front line, often by troops not familiar with the situation, makes it desirable that the more important tactical elements of the plan be in written form for transmission to the relieving unit. They can usually best be recorded in the form of a defense chart or battle map. This may be on a topographical map of the locality as a base, or it may be merely a chart or diagram. It shows the dispositions of troops, the works of defense, the sectors of fire, location of important stations, routes of circulation. lines of intercommunication and possibly the dispositions of the enemy so far as known, and if close at hand.

Tactics and routine in defense plans. A defense plan as we have stated, should cover all matters pertaining to the defense of the sector or area. Some of these will be of the highest tactical importance, others pure routine. It is impossible to draw a sharp line of distinction between these two classes, inasmuch as all routine matters have a bearing, more or less direct, upon the tactics of the defense. Many matters of routine are covered in administrative orders, regulations, circulars, memoranda and bulletins. They will vary so greatly according to the situation that we shall do no more than indicate some of the important items.

Inspections and reports. Officers of all ranks should, by frequent inspections within their commands, insure themselves that subordinate units have proper defense plans, that all instructions are being observed or carried out, and especially that the defense is ready and vigilant. Subordinates, in their turn, should make frequent reports to their immediate superiors as to the state and progress of the preparations for defense, recommending any changes in the approved plans or routine which they consider advisable, giving their reasons for such recommendations. During actual combat they should likewise keep their superiors constantly advised as to developments and the need for fire assistance, reinforcements or supplies.

Plan of Works.

Every defensive position is organized to the extent that the situation demands and that time and facilities permit. When the force remains stationary for a relatively long period the works of defense usually become quite elaborate, and if the front be an important one, several successive positions may be organized or partly organized. The reasons for this are several. If the front be well organized it may be held by a small number of troops whereby an economy of force is effected. Good defensive works reduce losses from raids or local attacks by the enemy and from the "war of attrition," so characteristic of the late conflict in Europe. They promote the health, comfort and morale of the troops, especially in the winter or in inclement weather. It is desirable to keep the troops employed, etc.

This organization is carried on in accordance with a detailed "Plan of works," which is modified from time to time. Details of the plan of works would seldom appear in a tactical order but might be attached as an annex thereto. In the small units the instructions are given verbally. The plan of works forms part of the defense plans of the unit.

The various works included in the plan of works and the manner in which they are located and constructed are described in detail in the course in Field Engineering, and will not be here further discussed.

TWENTY-FIRST LESSON.

PROBLEMS AND DUTIES OF INFANTRY IN DEFENSE.

We shall now consider in some detail the problems and duties of the commanders of the smaller infantry units in the front line. These duties naturally divide into two phases, *i. e.*, preparation for defense, and conduct of the defense.

THE INFANTRY BATTALION

Preparation for Defense.

Upon receipt of orders for the occupation of a defensive position and arrival at the locality designated, the battalion commander must give his attention to the following duties; in about the order mentioned:

Security during occupation of the position. Outposts or march outposts must be established to cover the front of the battalion. These may be placed by the company acting as advance guard during the approach to the position. Or if the approach has been made in company columns each company in the combat echelon may be directed to cover its own front. The location and strength of the outpost will be determined by the terrain, the proximity of the enemy, the presence or absence of other troops in front, such as cavalry. (See the subject of Outposts.)

Unless his flanks are protected by adjacent units the commander will take necessary measures also for their security, by extending the outpost to the flanks or sending out detached posts or standing patrols.

The companies of the battalion are held in such state of readiness for defense as the situation demands. If the enemy be close and combat imminent the troops may actually be deployed in their approximate combat positions, machine guns and other auxiliary weapons posted, etc. If the enemy be distant the troops may be held assembled by company, the men being permitted to fall out and rest near at hand.

Reconnaissance of the position. Having made the necessary immediate provisions for security, the battalion commander proceeds to make such personal reconnaissance of the locality to be defended as the situation warrants or permits. He will previously have studied his map. He now proceeds to verify and amplify on the ground the impressions derived from his map. It is never safe to determine the details of location of troops or defensive works from a map alone.

During this reconnaissance the commander is usually accompanied by his operations officer (Bn. 3), and the commander of the machine gun company. He may be accompanied by the captains of the companies of the combat echelon and the commanders of any auxiliary weapons assigned to support him.

During his reconnaissance the commander notes everything pertaining to the defense of the sector and determines upon the location of his various defenses. He will visit the sectors of adjacent units on the flanks, ascertaining their intended dispositions in order that his own may be properly co-ordinated therewith. Should time be lacking for full reconnaissance the commander may delegate a portion of this duty to a subordinate, Bn. 3 for example.

Initial Defense Orders.

During and subsequently to his reconnaissance the battalion commander estimates the situation and makes his decision and plan. He is now ready to issue his initial orders.

The initial orders in preparation for defense would never include all the items that would later form part of the plan of defense, as they would thus be unnecessarily long and involved. They would cover only such instructions as necessary to properly dispose the troops, assign their combat missions and initiate the organization of the position.

The commander assembles his principal subordinates at a convenient locality affording the best possible general view of the position. These subordinates would include all battalion staff officers and company commanders, and the commanders of any supporting auxiliary weapons; or so many of these officers as could be conveniently assembled at this time.

The orders would usually be verbal, or dictated, localities being indicated on the map and on the terrain. If necessary sketches might also be furnished.

The orders would include the following items, on the general standardized 5 paragraph form:

Par. 1. Necessary information of the enemy. Information concerning supporting troops, especially any troops covering the front (such as cavalry), the general plan of defense of the regiment, the battalions on the flanks, the strength and location of the regimental reserves, the artillery support to be given the battalion, if known at this time, etc.

Par. 2. The general plan of the battalion and the units attached to it. This would include: The front or sector to be defended, its limits defined by natural landmarks; the number of lines to be organized and the position of each (for example, line of observation, firing line, support line, battalion reserve line).

Par. 3. Designation of rifle companies for the combat echelon, with limits of front assigned to each. Number of lines to be occupied and organized. (If he deems necessary the commander may prescribe the strength of the supports for the combat echelon—usually this would be left to the company commanders.)

Special missions for the combat echelon—for example, contact with adjacent units, defense of an exposed flank.

Designation of rifle company for battalion reserve, location, and any special missions—for example, covering detachment for an exposed flank, carrying parties for engineer material, construction of obstacles, or battalion command post.

Approximate locations and combat missions of machine guns and attached auxiliary weapons—for example, to establish certain machine gun flankments, cover certain sectors of front, fire on certain localities, support certain companies in the combat echelon.

Nature and extent of organization of the position and general assignment of tasks. This would not be the complete plan of works, but a general statement of the work to be done, with sufficient detail to initiate the most important work.

Instructions, if any, as to the withdrawal or replacement of the outpost. Lookout groups in the line of observation may be furnished by the companies in the combat echelon, or from the battalion reserves.

Par. 4. Location of the rear echelon of the battalion, battalion ammunition point, battalion aid station, dumps for engineer material, and routes to such localities. Any special instructions as to dispositions of trains. Organization of carrying parties for engineer material.

Par. 5. Location of battalion command post or headquarters. Any special instructions as to intercommunication deemed necessary at this time—for example pyrotechnic signals to be used in calling for the artillery barrage or other fire support.

The foregoing would usually be sufficient at this time. As the preparation for defense proceeded, additional orders and instructions would be issued from time to time until the plan of defense was complete down to the smallest minor detail.

Should it be impossible to assemble all subordinate commanders, the orders might be issued individually. Each element of the command, however, should be given all the necessary information as to the missions of other elements.

Inspection of dispositions. Having issued his initial orders and seen his troops properly disposed, the battalion commander, either in person or through a staff officer, will make frequent inspections of the area for whose defense he is responsible, to see that his instructions are being carried out, that all works of defense are properly located and constructed, that the prescribed routine is being carried out, and in general that his defense is active and vigilant. He will require periodic reports from his principal subordinates as to the state and progress of the defense.

Artillery support. As soon as the divisional plans for artillery barrage and covering fire are completed and announced, the battalion commander will see that his scheme of defense conforms thereto. He will notify his subordinates as to these plans, giving the necessary instructions as to signals for barrage, when and by whom they may be sent up, etc.

Battalion command post. The battalion commander will select his own command post with great care. Ordinarily this post will be near the line of battalion reserves and about opposite the center of the sector. Its location, however, is fixed by the requirements it must fulfill. These are:

a. The post should afford the best possible view of the area occupied by the battalion, its foreground as far as possible to the front, and the terrain to its flanks.

b. The post should be such that the commander can see and control his reserve.

c. There should be good covered routes of communication (runner routes) from the battalion command post to all company command posts, the command posts of the attached auxiliary weapons, the command posts of the regiment and the battalions on either flank, the rear echelon and aid station of the battalion.

d. The post should not be unduly exposed to hostile view and fire.

Auxiliary observation stations. It will be seldom that any one command post will ideally fulfill all of these requirements, especially as some of them are in conflict. The best all around location should be sought. It is most desirable that the commander should be able to observe the conduct of all his troops, both combat and reserve echelons and auxiliaries, the enemy, and the troops on either flank. As this will seldom if ever be possible from any one station the necessary additional auxiliary observation stations are established and manned by intelligence personnel. There should be safe runner routes between these stations and battalion headquarters and, when practicable, other means of intercommunication.

In a stabilized sector telephone communication will usually be carried forward to battalion headquarters.

Report to regimental commander. Having issued his preliminary orders, disposed his troops and initiated his preparations for defense, the battalion commander will make prompt report on these matters to his next superior (regimental) commander. The report should be accompanied by the necessary maps and sketches. If conditions permit it may well be conveyed in person to the regimental commander, opportunity for discussion being thus afforded.

The battalion commander will render such additional reports as may be called for, or as he deems necessary. He will accompany the regimental commander when the latter inspects his area, when his plan of defense is completed he will furnish the regimental commander a complete copy thereof.

Battalion Defense Plan.

The commander will now as rapidly as possible complete the remaining items in his plan of defense, including all matters of routine in the occupation of the position.

Counter attack plans. The most important of these will be counter attack plans for the battalion reserves in the event of various possible developments of the attack. These will be similar to the corresponding plans of the strong point commanders elsewhere discussed. Arrangements will be made for the support of the counter attacks by artillery and other auxiliary weapons. The battalion reserves will be held under cover, natural or artificial, at a locality favorable for counter attack.

Plan of works. The battalion commander will prepare, in accordance with instructions from higher authority, a plan of works for the gradual extension and elaboration of the defensive organization. The items included in such a plan and the methods of conducting the work, are discussed in the course in Field Fortification. This plan will include the maintenance of all existing works. Instructions in accordance with the plan of works are issued from day to day.

Patrolling and observation. Under the supervision of the battalion commander the intelligence officer will establish the necessary observation stations and organize a systematic plan of observation and patrolling for intelligence purposes. (See Intelligence.) The battalion commander will prescribe the lookouts or observers and sentinels to be maintained by front line companies and the patrolling to be carried on.

Raids. The battalion commander will plan raids on the enemy's lines. In the case of large raids involving a considerable force and requiring artillery support, he will make recommendations concerning them to his regimental commander.

Supply. In connection with his plan of works and the general administration of his area, the battalion commander will establish the necessary dumps and depots of materials, tools, etc., and will arrange for the supply of material and its distribution to his command. This work will be under the supervision of the battalion supply officer (Bn. 4).

Relief. The battalion commander will prescribe the scheme of relief for front line units and the manner in which relief is to be conducted.

Sanitation. He will prescribe sanitary regulations for his area, and instructions as to the care of sick and wounded. Certain communication trenches, in a stabilized sector, are assigned for the evacuation of wounded by stretcher.

Miscellaneous items. The following additional minor items will be included in the plan of defense:

Instructions as to intercommunication in the battalion area, runner routes, etc. A map of these communications will be maintained at battalion headquarters.

Plan of circulation or movement, approach trenches designated as "in" and "out," signposting of routes. A map showing these routes is also kept.

Allotment of shelters.

Instructions as to preparation and serving of meals.

Instructions as to supplies to be kept on hand in trenches.

Instructions as to defense against gas. Gas alarms.

"Alerts," assemblies or "stand-bys." Routine inspections.

Instructions as to prevention of straggling.

Examination and disposal of prisoners, etc.

Detail of carrying parties, especially for ammunition (usually from the reserves).

Battle map. At each battalion headquarters there will be maintained by the battalion intelligence officer a "battle map" showing the area of the battalion and adjacent terrain, all dispositions of troops, defensive works, hostile organization, and other matters connected with the defense of the sector. This map will be kept always up to date from fresh information collected by Bn. 2. It forms an important part of the plan of defense.

Information to subordinates. The battalion commander will see that each strong point, each combat group, and each group of auxiliary weapons under his command is informed as to the battalion plan of defense, that each has its own plan of defense, complete in every particular, including a defense chart. (See Plates 41 and 42.)

Positions Occupied for Immediate Defense.

In the case of a position hastily occupied for immediate defense, as for example in a recontre engagement or to oppose a counter attack upon reaching an objec-

tive, many of the foregoing instructions, particularly those relating to routine and elaboration, will find no application. The commander may be unable to make a proper reconnaissance or to assemble his subordinates to receive orders. In such case his orders will be conveyed in the form of messages to his subordinates. The commander will prescribe the general line to be held and the organizations for the combat and reserve echelons, the details of defensive dispositions and works being of necessity left to the initiative of subordinates. The various measures herein outlined should be put in force progressively, according to their importance, as rapidly as possible.

Entering a Stabilized Sector.

On the other hand, upon relieving another unit in a stabilized sector, the battalion and its subordinate organizations will find the terrain already organized and a plan of defense in force. This plan should be transmitted in written (and graphic) form to the incoming organization.

Conduct of the Defense.

During the course of the combat the battalion commander, assisted by his staff officers and the observers and patrols of his intelligence personnel, and by reports from his subordinate commanders, closely follows the progress of the attack and the conduct of his troops. He sees that each element is carrying out the prescribed plan of defense, that the fire assistance of the auxiliary weapons is applied as needed, that artillery support is efficiently rendered, that communications (for runners, reinforcements and carrying parties) are maintained, and that ammunition is supplied to the troops in combat. He uses his reserves sparingly for reinforcement, where absolutely necessary, and employs them vigorously when opportunity for counter attack is afforded. He watches the progress of the attack on his flanks. He maintains contact with regimental headquarters, keeps his regimental commander constantly advised as to the situation, and calls for assistance if needed.

The dispositions and duties of the intelligence and communications personnel of the battalion are much the same in defense as in attack. Observation stations will be more permanent and better equipped, and the systems of intercommunication usually better organized.

THE INFANTRY RIFLE COMPANY.

Preparation for Defense.

The orders and defense plans of the company (strong point) commander, are in general similar to those of the battalion commander. The relations of the company commander to his combat groups and supports are similar to those of the battalion commander to his combat and reserve companies. The orders and plans of the captain will include fewer items but will be in greater detail.

Reconnaissance of the position. The captain may accompany the battalion commander in his reconnaissance of the battalion area. If not he employs his time in a preliminary reconnaissance and estimate of the situation. He carries out the orders of the battalion commander with reference to security, or in the absence of orders sends out such patrols as he deems necessary.

When the battalion commander issues his initial defense order the captain makes necessary notes thereon. He then makes a personal reconnaissance of his area, usually accompanied by his platoon commanders, noting all matters pertaining to his defense. If the proximity of the enemy requires, this reconnaissance may be made from one or more sheltered localities affording a good view of the terrain. The captain will, if necessary, consult the commanders of adjacent strong points in order that his defenses may be co-ordinated with theirs. For the same reasons he consults the commanders of any of the auxiliary weapons in or near his area, and

determines on the ground the lines of machine gun flankments and the location of the line of the defensive barrage of the divisional artillery, if this has been established.

Initial Defense Orders.

During and subsequent to his reconnaissance the captain makes his estimate of the situation and his plans for the disposition of his command. He then issues his initial defense order to his officers and non-commissioned officers (except the squad leaders), assembled for the purpose in a locality affording a good view of the position, including the foreground. If near the enemy the assembly is made under cover.

The orders of the captain are issued verbally, in the following form:

Par. 1. Necessary information of the enemy and of any friendly troops covering the front—including the outpost of the battalion. The general defense plan of the battalion, companies on the flanks, location of the battalion reserves. Location and combat missions of any auxiliary weapons supporting the company, especially flankments and other fields of fire of machine guns. Location of line of defensive barrage, if established.

Par. 2. The mission and general plan of the company. Front to be covered, its limits defined by landmarks. Number of lines to be organized (as line of observation, firing line, support line).

Par. 3. Designation of platoons for the combat echelon, combat groups to be organized, strength and location of each. (In the garrisoning of combat groups the principle of the integrity of tactical units is observed as well as possible. The garrisons consist of complete platoons, sections, or at least squads. Generally a combat group will occupy one line, firing or support line, but in some cases, to preserve unity of command, a platoon as a combat group may cover both firing and support lines.)

Any special missions for combat groups, such as contact with adjacent units, covering dead spaces by special dispositions, or fire of rifle grenades.

Designation of support platoon and post of same, usually under natural cover on or near the support line. Any special missions for the support, such as patrols or contact groups to be sent out, carrying parties for engineer material, assistance to other platoons, preparation of company command post, obstacles.

Instructions as to the details of the works to be constructed. Usually the trace and profile of trenches will be indicated by the battalion commander. (See Field Engineering.)

Assignment of tasks and tools, organization of working parties and reliefs. Order of importance of works.

The captain may locate and detail a party (usually from the support platoon) to erect an obstacle on the front of the position, unless this task has been assigned to other troops in the battalion commander's order. (It is often done by troops from the reserve under the supervision of the captain of the machine gun company.)

Instructions as to withdrawal of temporary covering detachments unless front is not otherwise covered. Detail of lookouts or groups for the line of observation, unless this is otherwise provided for in the battalion order.

Par. 4. Location of rear echelon of company, battalion ammunition point, dumps of engineer material; location of battalion aid station; and routes to these localities.

Par. 5. Location of company and battalion command posts and covered routes thereto. Instructions as to signals for barrage, if known at this time.

The foregoing will usually be sufficient detail for the initial defense order of the company. Additional orders are issued from time to time as the work of organization proceeds, until the organization and plan of defense are complete.

Locating the defenses. Inspections. The captain will give close attention to the tracing of the defenses in order to insure that they are disposed so as to afford the

most effective fire consistent with proper protection, and that they are adjusted in such manner as not to interfere with the fire of machine guns, to cover the foreground, to afford support to adjacent combat groups and defend the unoccupied intervals and areas. The defenses of each group should be such as to provide for fire in every direction, should this become necessary as a result of a hostile penetration of the strong point. The command posts of platoons and combat groups should be so located as to insure efficient observation and control of the troops.

During the progress of the organization the company commander will continually inspect the work to make sure that it is being properly conducted, but he will refrain from interference except when mistakes are being made. He will see that the necessary tools and materials are provided for the proper prosecution of the work.

Conduct of the work. If in close proximity to the enemy it may be necessary to wait until nightfall before starting work. In this case the positions are selected by day and the works traced and excavation begun at night. Having been started, work may be continued in daylight by working from the ends. (See Field Engineering.) In a position occupied for immediate defense the first works will be individual rifle pits or fox holes. These may later be connected to form a continuous trench.

The immediate combat emplacements are usually first prepared, and the obstacle in front of the position is placed at the same time—by night if necessary. This insures early completion of the most important dispositions. If time allows, the firing line and support line are made continuous, the necessary approach trenches are dug, and ultimately shelters and such accessories as snipers' posts, observation stations with camouflaged approaches, etc.

Defense plans of combat groups. The captain prescribes the mission of each combat group, in particular its normal and contingent ("A" and "B") sectors of fire, in such manner as to provide mutual support and to cover the entire terrain with fire. He indicates the emergencies which may require fire to the rear and insures the necessary arrangement of works to permit such fire. He causes each combat group commander (or each platoon leader commanding two combat groups) to prepare a plan of defense including a chart, in accordance with his instructions. He examines all such plans, corrects mistakes and harmonizes the whole, and prepares a defense chart and complete plan for the strong point.

Company command post. The captain will usually have decided upon the location of his own command post during his reconnaissance of his area, and will detail some men from his support platoon to prepare it. The proper location of this post is of the utmost importance to the effective conduct of the defense. Generally it will be located in the support line or between the firing and support lines, nearly at the center of the strong point. Its position, however is determined by its functions, and it will be located so as best to fulfill these, even if this be on a flank of the strong point. It should never be outside of the defended area.

From the command post, during combat, the captain supervises and controls the defense of his company. The post should afford good observation of: All combat groups, the supports, the terrain within the area, to the flanks and in the foreground to as great range as possible, the battalion command post, and the command posts of the adjacent companies on the flanks. It should have covered communications (runner routes) to the command posts of the combat groups, the support platoon, the battalion, the supporting weapons and the adjacent companies, also to any auxiliary observing stations.

Auxiliary observation stations. It will not always be possible to fulfill all of these requirements from a single station, but they indicate what is desirable. The captain will establish such auxiliary observation stations as may be necessary to supplement a limited view from his command post, manning these stations with runners, buglers or scouts. For example, a post may be placed on the flank to observe the progress of affairs in an adjacent strong point which cannot be seen from the command post.

Message center. Communications personnel. The message center, in charge of the 1st sergeant, will be at the command post. Here also will be assembled the communications personnel assigned to company headquarters. These include the same individuals, performing the same functions as in attack. The captain will send runners to battalion headquarters and to his rear echelon.

Location of supports. The company commander will post his support platoon in a locality convenient for fire support or reinforcement of his combat groups, and for counter attack. Counter attack is the principal mission of the support, and its location should be such as to meet all probable requirements. The support, or a portion of it, may be assigned to garrison a combat group prepared in the support line, should the situation call for this.

Usually the support will be located centrally and on or near the support line. But this will depend on the terrain. If no natural cover is available at the desired location artificial cover should be prepared. As the support is the principal weapon with which the commander influences the course of the combat, it should be under his immediate control, and therefore not too distant from and in easy communication with the command post.

Counter attack plans. The commander plans in advance various counter attacks to meet various possible developments of the attack. These are discussed in some detail in the example following. Whenever practicable the support should counter attack as a unit. In any case a counter attack should be made by at least a section. If time allows, counter attacks should be "rehearsed," the troops actually moving over the routes they will use and the terrain on which the counter attack is to be delivered.

Reports to battalion commander. Having completed the dispositions of his troops and inaugurated the organization of the strong point, the captain will make a report, accompanied by a sketch of his dispositions and proposed works to his battalion commander. He will, if practicable, present this report in person and make necessary detailed explanations. When his plan of defense is completed he will make a full verbal report thereof, or furnish a written statement of his plan, together with the plans of each combat group, to his battalion commander. He will make progress and situation reports from time to time as directed, usually on a prescribed form; including such items as: Information of enemy activities (from patrols and observers); morale and physical condition of the troops; casualties (killed and wounded); sick; progress in carrying out the plan of works, and operations contemplated for the immediate future; state of maintenance of works; state of supply and supplies or tools needed; recommendations (if any) for changes in plan of defense or plan of works; etc.

Patrolling, observation and sniping. The captain will prescribe the sentinels, observers and snipers to be posted, and the patrols to be sent out. He will detail daily an officer of the watch, who will be responsible for the vigilance of the defense, the watchfulness of sentries, and the observance of all general instructions for the troops.

Routes of communication. The captain will prepare a plan of sheltered routes of communication, providing for the movement of runners or reinforcements to all parts of his defended area. If the natural routes are inadequate they are gradually improved, and communication trenches are constructed, beginning with those most urgently needed.

Defense of dead spaces. The captain will carefully note any areas in the foreground of his position or within the defended area, which are sheltered from rifle and machine gun fire (dead areas) and which might afford cover for the attacker. He will provide for the defense of such areas by trenches specially located, by the fire of rifle grenades, or if beyond the range of rifle grenades, by light mortar fire. He will point out such localities to the communication agents of the light mortars at his company headquarters.

Raids. If in close contact with the enemy the captain will study the possibilities of raids on the hostile position and the fire support required, and will make recommendations concerning them to his battalion commander. He will note any areas habitually subject to hostile artillery fire, and modify his plan of defense by removing troops from such areas when practicable.

Plan of works. The captain will prepare a plan of works of defense, based on the instructions of the battalion commander. He will give the necessary instructions to his subordinates for carrying out this plan, and will constantly inspect the progress of the work. He will see that necessary tools and supplies of engineer materials are provided, and carrying parties detailed.

The plan of works will include clearing the foreground of the position, filling ravines and hollows with brush, unless this has been otherwise provided for by the battalion commander. In any event ranges to important landmarks in the foreground should be measured and recorded on the defense charts of combat groups and squads.

Miscellaneous items. Other items of the plan of defense will include instructions as to preparation and distribution of meals (usually prepared at the rear echelon and sent forward to the trenches by carrying party), tools and supplies of all kinds to be kept in the trench area, sanitary regulations, allotment of shelters; "alerts" or standbys, instructions as to routine inspections, gas alarms and defensive measures, disposition of sick and wounded and prisoners, regulations as to stragglers.

Transmission of plans to relief. In the case of a position occupied for a considerable period, the strong point commander will put his plan of defense in written form for transmission to the troops who will relieve him. He will cause each combat group to adopt similar measures. He will give to the commander of the incoming organization all additional information which may aid him in his defense of the area.

Positions Occupied for Immediate Defense.

In the case of a position hastily occupied for immediate defense many of the foregoing details must of necessity be omitted. The troops will be deployed, and the men will have a tendency to dig individual pits in any locality where they happen to halt. It will be the duty of the company commander and his platoon leaders to see that these pits are dug in a locality favorable for defense and not in low ground affording a very poor field of fire. He will see that the front is properly aligned, with no weak salients or re-entrants, that mutual support by adjacent groups is insured, that the defenses are co-ordinated with those of units on the flanks, that an adequate support is posted in a favorable locality, that observation and intercommunication are provided for—in short that the defense is systematized so far as proper dispositions of troops are concerned, and not left to chance or to the judgment of individual soldiers actuated chiefly by a desire to provide immediate cover for their individual selves. Orders will be given in fragmentary form or by messenger, and the captain will inspect his defenses and correct mistakes on the ground.

Conduct of the Defense.

During the course of the combat the company commander, from his own command post and with the aid of his auxiliary observation stations, closely watches the progress of the attack, and the conduct of his own command. He notes whether each combat group is carrying out the approved plan of defense and meeting emergencies in an intelligent manner.

In case of mistakes or neglect of precautions on the part of his subordinates, he takes necessary steps to regulate their conduct by means of messages, signals or mechanical designation of targets.

For example, if a group of the enemy has succeeded in effecting a lodgment in the unoccupied interval between two combat groups and is not being fired on by either, the captain may direct attention to such target by signal, or may send to one of his combat groups a simple message: "Two squads of enemy on your right flank," possibly adding: "Shift fire of one squad to right." If the enemy has filtered men into a dead space in front of one of his combat groups, and is apparently not observed, the captain would send a message to the combat group commander: "Enemy in hollow your right front. Use rifle grenades." Or if the hollow were beyond range of rifle grenades the message might read: "Enemy in hollow your right front. Have requested light mortar fire." The captain would then point out the hollow to the agent of the light mortar, or send a message by a man who could indicate the locality. If a machine gun covering the front of his right combat group should be put out of action, thus weakening the defense of that front, and this fact be not noted by his subordinates, the company commander might send a message to the next combat group on the left: "Machine gun on our right out of action. Shift automatic rifle center squad to cover front of group No. 1." (See Plate 41.)

Targets may be indicated, both to the combat groups and to the supporting weapons, by tracer bullets, fired by scouts of the support platoon from favorable localities. Combat group commanders should be on the lookout for such signals.

The captain should promptly recognize the need for fire support of the auxiliary weapons assigned to assist in the defense of his area, and furnish the necessary information as to targets.

As the attack is launched he will call for the defensive barrage of the artillery, usually by the prescribed pyrotechnic signal or by communication with an artillery observation station in his locality.

If a combat group be hard pressed the captain may assist it by fire of his supports, or by sending forward one or more squads from the support to reinforce the defenders.

Ordinarily the most effective means of relieving an unfavorable situation will be by counter attack of the supports, and opportunities therefor should be sought.

The commander, both in person and by the aid of his runners, scouts, etc., will keep up continuous reconnaissance during the action. He will note the progress of the attack in adjacent sectors. He will see that the routes for intercommunication and circulation of troops are kept open, alternative routes being used as necessary. He will maintain communication by runner and visual signal with battalion headquarters, keeping his superior constantly advised as to developments, and indicating when and where assistance is needed.

Withdrawal. In case a withdrawal is ordered by higher authority the captain will supervise the operations of his command. The withdrawal of the combat echelon is usually effected straight to the rear, using approach trenches if available, and covered by the fire of the supports and auxiliary weapons. The subject of withdrawal from action is treated in detail later in this course.

TWENTY-SECOND LESSON.

THE INFANTRY RIFLE PLATOON.

Preparation for Defense.

Dispositions of a front line platoon. A platoon may be assigned intact as the garrison of a single combat group, or it may furnish garrisons for two or very exceptionally for three such groups. The principle of the integrity of tactical units should be observed. If practicable the platoon should be held intact. If it be divided into two groups it is desirable that each of these be a complete section. This, however, will depend on the nature of the terrain and the mission or extent of the task assigned to each group. In any event a combat group should consist of one or more complete squads. A squad should never be so dispersed as to be beyond the control of the squad leader, and squads in defense, as in attack, should act as

units. Automatic riflemen and rifle grenadiers should not be separated from their squads to form groups of these weapons.

A platoon, as a combat group, may hold one or two squads or a section as a mobile support for reinforcement or even for local counter attack. A smaller group would have no support, but might shift squads or individuals from one part of its area to another, to meet the emergencies of combat. Small local supports are held in a central position, or slightly in rear of the center of the area, under natural cover, if available. If there be no natural shelter they must be intrenched.

Each combat group is commanded by the senior officer or non-commissioned officer with it—a section or two squads by a section leader, a single squad by its own leader. The duties of a commander of such a small group are similar to those of a platoon leader in the same capacity.

If the platoon is divided into several groups the platoon leader establishes his command post in a central location where he can control the conduct of his men. He leaves the immediate command of each group to the senior non-commissioned officer therewith. The groups comprised in any one platoon should always be adjacent to each other.

The combat groups of a single company in the first line will usually be disposed in one line (firing line) or in two successive lines (firing and support lines), according to the situation, especially the relative importance of frontal fire and defense in depth. A platoon as a combat group might cover both lines. A smaller group would be disposed in one line only.

Areas of combat groups. Intervals. The area occupied by a combat group should be small enough to insure unity of action and control by its leader, and large enough to properly cover the sectors of fire assigned to it and to avoid crowding and consequent exposure to hostile fire. This area may vary according to the situation, from that occupied by a single squad (50 x 50 yards), to that occupied by a platoon covering two lines of a position (150 yards front by 200 yards depth). (See Field Engineering.) The distance from center to center of combat groups on the same line, should never exceed 400 yards even in open country, and may be as little as 100 yards.

Though a small group may be deployed in the first instance on a single line parallel to the front, the necessity for resistance to the flank and even to the rear, in case of a hostile penetration, require the defense of an area having a certain depth from front to rear, usually at least 50 yards.

Measures of security. A combat group may or may not furnish lookouts to occupy the line of observation, if such there be. Such lookouts may be furnished from front line platoons (combat groups) or by supports or reserves. Each combat group maintains at all times the necessary sentinels, observers and snipers within its own area; their number depending on the strength of the group and the probability of attack as indicated by the general situation, proximity of the enemy, terrain, weather, season, etc.

Initial Defense Orders.

The company commander will, when practicable, issue his initial defense order in the presence of all officers and non-commissioned officers down to include the section guides. In addition to this he will indicate on the ground the location of each combat group, and either at that time or later, he will indicate its "A" and "B" sectors of fire.

If the orders are not issued in the presence of the non-commissioned officers, each platoon leader commanding one or more combat groups will issue an order to his non-commissioned officers, including squad leaders if practicable, about as follows:

Par. 1. Information of the enemy and of supporting troops to include those covering the front, and the companies on the flanks. The general defense plan of the company to include dispositions of all platoons. Location of any machine gun flankments affecting the dispositions of the platoon.

Par. 2. The mission and general defense plan of the platoon—to organize and defend one or more combat groups at the localities indicated.

Par. 3. Composition and commander of each combat group, and exact location. Mission of each group—to cover the fronts (flanks or rears) of certain other designated groups, defend certain intervals, areas or dead spaces. Any special missions.

Instructions as to nature of works to be executed, assignment of tasks, working parties and reliefs, tools and materials.

Measures for security if such be necessary.

Par. 4. Location of rear echelon of company, dumps of engineer material, battalion aid station, and routes to these localities. Dispositions of packs, rifles or other personal equipment during work. Any other necessary administrative details.

Par. 5. Location of platoon and company command posts, and posts of all neighboring combat groups. Instructions as to pyrotechnic signals, if any are prescribed.

Tracing the works. Assignment of tasks. Having issued his orders the platoon leader, assisted by the platoon sergeant and other men, proceeds to trace on the ground the trenches of each combat group, using tracing tape if available.

The trace of the works is adjusted to the terrain, to provide a good field for grazing fire to front, flanks and rear (over the parados); to the machine gun flankments; and to adjacent combat groups, to afford effective fire support. (See Field Engineering.)

It is desirable that these locations be examined and confirmed by the company commander before work is begun.

The platoon leader then issues tools and distributes the working parties to their tasks, or causes this to be done by the combat group commanders under his supervision. Each combat group digs its own trenches. (See also remarks concerning night and day work under the company.)

The platoon leader designates the fire sectors for each group. Although such sectors are designated, the emergencies of combat may call for fire in any direction, and the trace and profile of the trenches must be such as to provide for this all around defense. These dispositions are discussed elsewhere.

Ranges to points in foreground. The platoon leader informs his subordinates of the ranges to important points in the foreground. He causes each combat group and each squad to prepare a range card, showing the combat posts of the troops and the sectors of fire, defined by landmarks. (See course in Musketry.)

If there be machine guns in his area, the platoon leader should dispose his defenses to cover and protect these guns, without interfering with their fire, either along their flankments, or in other directions.

Platoon command post. The platoon leader carefully selects his own command post. This should be within his area, and should fulfill the same requirements as the company command post, except that a less range of visibility is necessary. The post should afford a view of the entire area occupied by the platoon, and of the surrounding terrain, well to the front, and at least as far as all adjacent combat groups in any direction, as well as a view of the company command post. There should be sheltered, or at least partially sheltered runner routes from the command post to the command posts of all neighboring combat groups, both those comprised in the platoon and others, to the company command post and to any auxiliary observing stations within the platoon area.

Each combat group commander establishes a command post fulfilling similar requirements.

The platoon leader will usually post a runner as an auxiliary observer on each flank of his area. One runner will be sent to the company command post, and one remains with the platoon leader.

In a fully organized position sheltered routes for runners are provided by the trenches. When the trench system has not been completed the exposure of the

runners is necessarily great. They must be skilled in utilizing any natural cover available.

Sentries, observers and snipers. The platoon leader designates the sentries, observers and snipers to be maintained within his area, in accordance with the orders of the company commander. He prescribes their duties, stations and reliefs, by night and by day. The remainder of the men, except when called to their combat posts, are engaged in extending or maintaining the defenses, performing other miscellaneous duties, or resting and sleeping. The limits within which they may move are carefully defined and circumscribed. They are not permitted, except under orders, to depart from the near vicinity of their combat posts.

The duties of snipers have been discussed in the course in Musketry. Snipers are maintained in each combat group, the duty being performed by the squad scouts or other properly trained men. It is preferable that they work in pairs, in a well concealed "nest" affording a good view and field of fire to the front. They continually observe and report all activities of the enemy. They oppose the enemy's efforts to gain information, by firing on his observers, sentries and snipers, and on any scouts or patrols who attempt to approach the position. During combat the special mission of snipers is to pick off the leaders of the attacking troops.

Supervision and reports. The platoon leader will personally direct or closely supervise all work within his area. He will make such progress reports to the company as prescribed or necessary.

Defense Plans.

Responsibilities of the platoon leader in the emergencies of combat. In defense, as in attack, it is the leaders of the small infantry units, and especially the platoon leader, on whom rests the immediate responsibility for victory or defeat. Too often during peace the young officer, feeling his subordinate position, acquires the fatal habit of doing nothing except what he is expressly told to do, and only so much as he is told. He leans upon his superiors. When the battle is on, this situation, if it has existed, is completely reversed. The commander-in-chief leans upon the platoon leader. The nation leans upon him, and prays that he may prove equal to his important task.

We have pointed out that in the attack the platoon leader must be able to meet emergencies arising without warning, on unfamiliar ground. The chief advantage enjoyed by the defense is the opportunity to study the situation in advance and foresee the events that may arise, to an extent that is seldom possible in attack. The ground is not unfamiliar, and emergencies seldom arise without some warning. But this advantage is not inherent in the mere situation of defense alone. It requires study and prevision. If the platoon leader simply sits down, his mind at rest, and waits events, he deliberately throws away his greatest advantage. Defense plans do not mean to simply build field works, place men in them and then wait for the attacker. The platoon leader's task is to maintain himself in his area. His limits of space are narrow. His works have been properly constructed, his men are properly placed, they know what to do. Apparently nothing further is necessary except to wait for the enemy to make his appearance. But here arises a grave question. *Are the works properly constructed, are the men properly placed, do they know what to do—for every emergency?* If the platoon leader asks himself this pertinent question too often he will find that the answer is "*No.*"

The infantry in defense in principle fires on the target which is most dangerous at the time. But this cannot be left to the judgment of the individual soldier or even the squad and section leaders. They are too prone to fire on the most easily discernible target, which is not always the most dangerous. Or their attention may be riveted by one development, causing them to overlook others of a more dangerous nature. If left to themselves there would be too great a chance that all would concentrate their fire on the conspicuous targets, leaving portions of the front uncovered. Although fire must certainly be concentrated on the most dangerous

target, other targets which may become dangerous must not be neglected, and every part of the front must be under observation and when necessary under fire, at all times.

To insure this, flankments are prescribed for the machine guns, and "A" and "B" fire sectors for the infantry groups, in such manner that the entire front is covered, if orders are obeyed. But this is not enough. The enemy may penetrate the position; so that fire to the flanks and even to the rear may be required. Certain elements of the defense will be put out of action, throwing additional duties and responsibilities on the remaining elements. To meet such situations fire must be switched, emergency fire sectors established, riflemen must be shifted about within the areas of the combat groups, reinforcements for the fire units must be sent in—all this in addition to the counter attack.

It is possible, by careful study of the situation, to foresee many if not most of such emergencies, and to plan for them in advance. The platoon leader, if he is qualified to fill his position, should thus study his situation from every angle.

His works may be properly located, and his men properly disposed for effective fire in the *initial sectors* assigned them. Their flank is protected by a group on their left. But this group may be overrun by the enemy. If so, would its capture render the platoon leader's position, or any part of it, untenable for his own troops? If so is there some other location where they might evade fire from the captured area, and still fulfill the original mission? Has a trench been placed in such locality? Is there any portion of the platoon's area from which it could dominate by its fire the adjacent area, in case of its capture, and thus neutralize the enemy therein? If so is there a suitable fire trench at such locality? Is it now suitably garrisoned? If not, how many men would be required for such an emergency mission—a squad or two squads? Where are they to come from, what men can be spared from other duties for this purpose? Is there a sheltered route by which they can reach the desired position?

Are the trenches in his area suitably located and prepared for fire to the flanks and rear in case of a hostile penetration? What men are to deliver such fire, and do they know about it? Would the men executing this fire be unduly exposed to enfilade or fire at their backs? Where might such fire come from, and how might it be evaded?

If the trenches are continuous is there a possibility of the enemy advancing along them from the flank (of course there is), and how is such a move to be checked, from what position and by whom?

Are there any areas to the flank or in rear from which any portion of his position might be subjected to enfilade fire? If so what should be done in case they are occupied by the enemy? Would it be necessary to shift the men exposed to another locality, and if so what effect would this have on other elements of the defense?

Has the platoon leader held a small support to meet possible emergencies? If not, might it be wise to do so? Might adjacent platoons or combat groups assist the platoon leader in meeting some of these emergencies? Has he consulted their leaders in regard to the matter, arranged any signals?

Would a heavy rainstorm fill the trenches with water and render them untenable, or cause them to cave in? How can this be prevented?

Has the platoon leader properly instructed the subordinates who must assist in meeting the possible emergencies? Has he rehearsed the measures to be taken to insure that they will be properly carried out when the real emergency arises?

The foregoing are but a few suggestions as to matters to which the platoon leader should devote his thought while he has time. Each situation will present its own problems, differing in detail at least from those of any other situation. These are matters to which the battalion commander cannot devote his personal attention. *They are the platoon leader's problems.* Most of them will be quite plain to the man who *thinks*. Most of them will naturally be overlooked and neglected by one who does not think.

In perceiving these problems which may arise, and in solving them in advance, the platoon leader prepares a *real* plan of defense. He will be immeasurably better prepared to maintain his position and defeat the aims of the attacker, than the thoughtless leader who relies upon his instinct or intuition to meet the emergency after it has arisen. Few if any leaders are endowed with the mysterious power of solving such problems as these by intuition. But any intelligent man can cultivate the habit of thinking out his problems, which is far better. Animals have instincts. Man alone possesses the superior power of reason, and he should learn to use it. In no situation of life is there a greater demand for reasoning power than in infantry combat.

To solve his problems the leader must of course be a trained man, familiar with the principles of combat, and the powers and limitations of men and of weapons. And to call forth the best efforts of his command, by which alone he can achieve success, he must be a leader, in every sense of the word. The untrained man, however great his intelligence or his latent powers, can neither correctly solve the problems of combat, nor command the confidence and respect of his men. He cannot be a successful leader.

Meeting the emergencies of combat. From the preceding discussion it will be apparent that the emergencies of combat, including those which may not have been foreseen, are met by:

- a. Switching the fire of automatic rifles, squads, or larger units.
- b. Changing the positions of these elements.
- c. Use of supports for reinforcement and counter attack.
- d. Fire support of auxiliary weapons.
- e. Assistance from neighboring combat groups.
- f. Assistance from the company (reinforcement or counter attack).

Fire support of auxiliary weapons. The platoon leader should know the positions of the supporting weapons, their sectors of fire and ranges, in order that he may perceive when their assistance can be rendered. Requests for such assistance are usually made through the company commander, the position and nature of the target being plainly indicated, by messenger, sketch or tracer bullets.

The relation of the platoon leader to the auxiliary weapons is much the same in defense as in attack. His relations with the machine guns is usually closer, inasmuch as these weapons are relatively more important in defense than in attack, and one or more guns may be emplaced in the area of a front line platoon. The platoon leader co-ordinates his plans with those of the machine gunners, and affords protection for the guns, but they are not his under immediate control.

Conduct of the Defense.

As the attack approaches the position the combat groups open fire in the judgment of their leaders, or at a range previously prescribed. Snipers or other expert riflemen fire on the leaders of the attack.

The platoon leader, assisted by his platoon sergeant and auxiliary observers, closely watches the progress of the attack both in his own front and to the flanks. He sees that his men take their assigned combat positions promptly, and carry out the measures provided for in the plan of defense, including switching fire and changes of position when necessary. He sees that fire is directed upon all threatening targets. Should any of his subordinates fail or delay to carry out prescribed or suitable measures, and especially should any threatening target be overlooked, he gives necessary instructions by runner or signal, or indicates targets by tracer bullets fired by a runner or scout at or near his command post. If he has a support he utilizes it for reinforcement or counter attack, as the situation demands. He calls for fire assistance from the auxiliary weapons, or support from the company, when the situation demands.

Intercommunication in the platoon during defense is much the same as during attack. It is largely a matter of visual signals and safe runner routes. There should be visual connection with company headquarters.

The platoon leader keeps his company commander advised as to his situation, especially as to the progress of the attacker.

Duties of the platoon sergeant. The platoon sergeant, in defense as in attack, is assistant to and replacement for the platoon leader. He should not be assigned to the command of a section or subordinate combat group except in emergency. His post is with the platoon leader unless the latter otherwise orders.

Functions of Support Platoons.

Support platoons of front line companies are usually held mobile under cover, in or near the support line. In emergency they may be assigned to garrison combat groups in the support line, or a portion of the platoon may be thus assigned.

The chief function of company supports is the local counter attack. This has been elsewhere discussed. The leader of a support platoon should study the routes over which he will move and the ground on which he will operate in case of counter attack. He will thoroughly familiarize himself with the counter attack plans included in the company plan of defense, and will recommend to the company commander such modifications or additional plans as he considers wise.

TWENTY-THIRD LESSON.

ILLUSTRATIVE EXAMPLE, DEFENSE PLANS OF SMALL UNITS.

The Company Strong Point.

The more important elements of the defense plans of the smaller units will be better understood by a reference to Plates 41 and 42. The diagram in Plate 41 represents a company strong point, whose limits are indicated. There may or may not be an outpost position or a line of observation in front.

In accordance with instructions from higher authority the strong point is organized with two lines of defended areas, the advanced line being the line of resistance or firing line, and the rear line the line of supports. A definite front has been assigned to the company to defend, and the approximate or general location of the firing line has been indicated in the orders of the battalion commander.

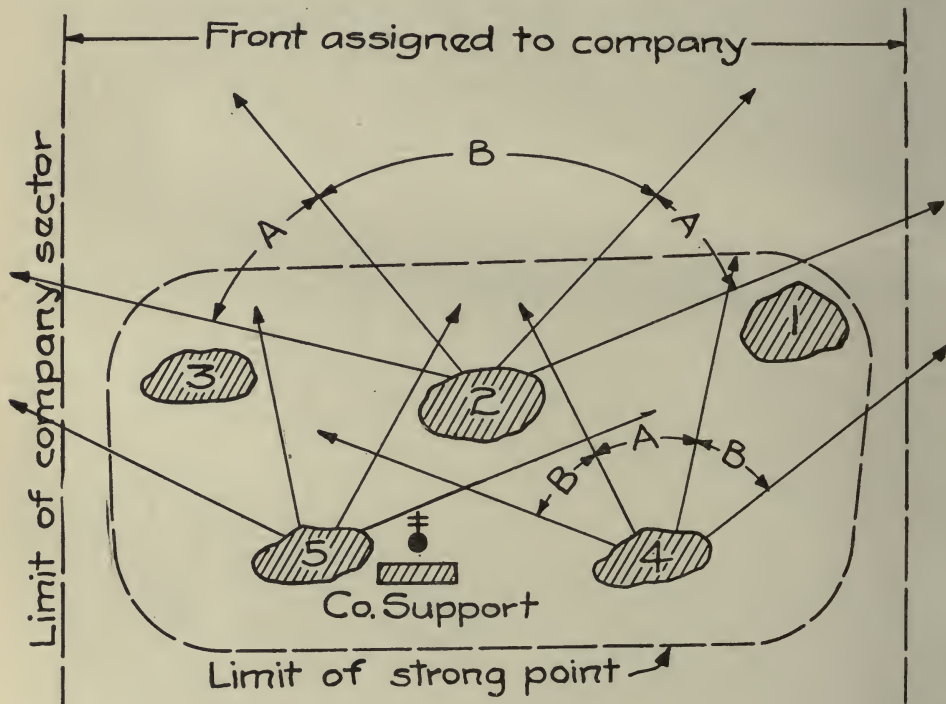
The company commander makes a reconnaissance of his strong point, or the area he has to defend, and an estimate of the situation. He decides that the proper defense of the area will require five combat groups. Three of these (Nos. 1, 2 and 3) will be disposed about the firing line as an axis, and two (Nos. 4 and 5) about the support line, as shown in Plate 41. The actual location and extent of the areas occupied by the combat groups will depend on the terrain. They will be disposed so as to afford the most effective fire, both over the foreground and within the area of the strong point. In deciding upon these dispositions the company commander will visit the neighboring strong points on both flanks, consulting the commanders thereof. He will ascertain their plans and arrange his own defenses to provide a proper continuity of the front and the most effective dispositions for mutual support of and by his neighbors.

The captain next decides that he will employ two of his platoons as garrisons for the combat groups and hold one as a mobile support for reinforcement and counter attack. The support will be stationed in the support line or as close thereto as available cover and concealment can be found.

The platoons designated for the combat echelon, or as garrisons for combat groups, will be distributed amongst these groups in accordance with their tactical importance, especially the extent and importance of the areas to be covered by fire. So far as possible, in this assignment, the principle of the integrity of tactical units will be observed. It would be desirable to have each combat group garrisoned by an entire section. In any case the garrisons will consist of one or more complete squads. Combat group No. 5 is of relatively less importance than the others, and the captain decides that he will garrison it only in case of necessity and that in such case he will use one or two squads from his supports for the purpose.

The battalion commander has ordered two machine guns emplaced in the area of combat group No. 2. These guns will co-operate with the garrison, but will not be under the command of the combat group commander. They will be assigned flankments across the fronts of combat groups Nos. 1 and 3, but will also be sited for fire to the front.

The captain next assigns combat missions to each combat group. The evident missions of combat group No. 2 are to cover by its fire the fronts of the two adjacent groups on either flank (Nos. 1 and 3) and the unoccupied intervals between (which are probably low ground), and the foreground in its own front. Of these



Defense Plan of Strong Point
(not drawn to scale)

PLATE 41.

the first mission is the more important, as it defends the front by enfilade or oblique fire, which is always more effective than frontal fire. The captain therefore assigns to this group two normal or "A" sectors in front of the adjacent groups, and a contingent or "B" sector covering the foreground, as shown in the diagram.

The most important mission of combat group No. 4 is to defend the inner flanks of groups 1 and 2 and the unoccupied interval between. This will be its "A" sector. It will have two "B" or contingent sectors, covering the flanks and rears of the advanced groups. The other groups will be assigned missions in a similar manner.

The captain will now carefully examine the entire terrain in his area and the foreground to ascertain whether there are any localities which cannot be reached by the rifle fire of his combat groups. Any such areas as are within the sector of and not beyond rifle grenade range from a combat group will be assigned to it for defense, instructions being given to bombard the area with rifle grenades should

the enemy find a lodgment therein. If there be any dead areas in the foreground, beyond the range of rifle grenades (over 200 yds. distant from any combat group), they will be noted with a view to requesting light mortar fire on such areas when necessary.

The foregoing decisions having been made, work on the combat emplacements may be commenced. The captain will indicate the location of the combat groups and will direct his platoon leaders to trace out the trenches or lines of fox-holes or rifle pits to be occupied. The captain will supervise this work, insuring proper locations for the most effective fire. The locations being satisfactory, working parties are organized, tools distributed and work is begun. (See course in Field Engineering.)

At this time the captain should send a report of his dispositions, together with a sketch, or map if available, to his battalion commander. This will afford the latter an opportunity to order any changes he desires before work has proceeded too far. If practicable the battalion commander, accompanied by the company commander, will make an inspection of the strong point, and correct any errors on the ground.

In general all trenches will be excavated by the troops who are to occupy them. The captain will assign his support platoon to assist the combat groups, or to any other tasks, such as the preparation of command or observation posts, construction of obstacles, etc.

The obstacles may be located by the commander of the machine gun company, or a battalion staff officer. If not they will be laid out under the supervision of the captain of the front line company in accordance with the principles laid down in the course in Field Engineering.

Ranges to important points in the foreground are measured or carefully estimated, and marked on the defense charts of the combat groups.

The captain next selects and prepares his own command post. The requirements which this post should fulfill have been elsewhere discussed, and are in general the same in defense as in attack. The necessary auxiliary observation posts within the strong point are located, and cover for their personnel is provided.

The next item of importance is the routes of communication. These will include routes for the movement of troops within the strong point, and runner routes between the company command post, the combat groups, the battalion command post, the stations of the auxiliary weapons supporting the company, and the command posts of adjacent units on the flanks. In the first instance the best natural routes are selected. If time allows, these routes are artificially improved, communication trenches dug, etc.

Counter attack plans. The location of his supports having been fixed the captain considers counter attack plans to meet various possible developments of the attack. His mission is to maintain himself within his strong point and expel any of the enemy who may gain a lodgment therein. For the present, at least, he will not contemplate any attacks beyond his own area.

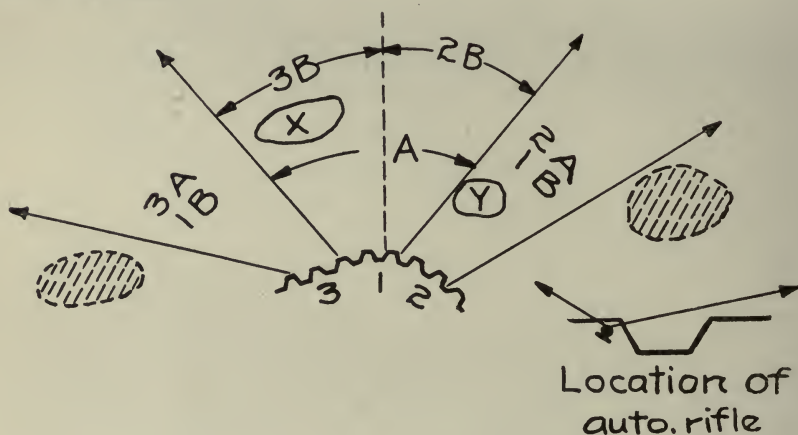
The developments most to be feared would be a penetration by the attack into the intervals between combat groups Nos. 1 and 2, or 2 and 3. In the former case the counter attack might pass through the interval between combat groups Nos. 2 and 4. It would thus strike the enemy obliquely in flank, and would be supported by the fire of the combat groups on its flanks. A similar procedure might be followed in case of a penetration of the interval between groups Nos. 2 and 3. Should there be a simultaneous penetration of both intervals, a section of the support might be launched against each, or the enemy in one interval might be pinned to the ground by reinforcing the combat group opposite, in the support line, and the support launched against the other. If an approach trench be ultimately constructed leading from the position of the support forward to combat group No. 2, this would be favorable for the departure of a counter attack against either of the intervals mentioned. Should the enemy overrun combat group No. 2, the counter attack would be straight to the front, supported by the fire of all the remaining groups. In

case of a penetration into either of the intervals on the flanks (right of group No. 1 or left of group No. 3) or the overrunning of either of the flank groups in the front line, the counter attacks might be launched from the same position and in the same manner. Or the supports might be moved to the right or left, even into the adjacent strong points. The manner in which such a lateral movement might be safely effected, should be considered.

The captain considers all these various contingencies and plans an appropriate attack to meet each. His plans would, of course, be greatly influenced by the lay of the ground, and by the defensive works which may be installed. The captain should consider what support to the counter attack might be given by the auxiliary weapons, from their known positions.

The captain would further plan for the withdrawal of his advanced line of combat groups should this be ordered by higher command. Such a withdrawal could be best effected in a position having continuous lines of trenches, especially approach trenches between the firing and support lines, which should be provided if time permitted.

The captain would prepare a defense chart for his strong point as a whole, showing all his defensive dispositions, and would cause each combat group to prepare a chart for its own area.



Defense Plan of a Combat Group

PLATE 42.

The foregoing include the principal tactical items in the defense plan of a strong point. In a highly stabilized position the plan would be modified from time to time as the defensive organization was extended and elaborated. There would also be included in the plan many items of routine, especially those pertaining to security, supply, maintenance, sanitation, etc.

Combat Group.

Let us now consider the essential features of the defense plan of combat group No. 2 of the same company. (Plate 42.)

The garrison consists of the 1st section of the 2nd platoon of the company. The combat missions of the group and its "A" and "B" sectors have been indicated by the company commander. The sector of fire assigned is wide, and the group is required to defend the fronts of both adjacent groups in the same line. The combat group commander decides that he will need all three of his squads to develop the required fire power, and that he has not sufficient strength to provide a mobile support.

Standing at the position indicated by the captain as the center of his group, the combat group commander selects a number of prominent features of the terrain in the foreground and to the flanks, approximately on the lines determining his "A" and "B" sectors as defined by the strong point commander. He also selects a distant point near the middle of his "B" sector.

He then traces, or assists his platoon leader in tracing, a sufficient length of trench to accommodate his three squads without crowding. This trace will run approximately along a contour, but with sufficient grade for drainage, and adjusted to allow the most effective fire in the sectors assigned. (See Field Engineering.)

Unless otherwise directed by the captain the platoon leader adopts the octagonal trace as being favorable for the development of fire in several directions. As soon as the trace is laid out, work of excavation is started.

The combat group commander (or the platoon leader) visits the adjacent groups to make certain just where their trenches will be located. He also consults the commander of the machine guns in his area, to insure that his defenses will not interfere with the fire of the machine guns. As these guns will be located on higher ground they will probably be able to fire over the trenches, but, if necessary, unoccupied intervals for the guns to fire through will be left in the trench.

The section leader (combat group commander) then makes a sketch of his defenses somewhat like Plate 42, except that the features of the terrain marking the limits of his "A" and "B" sectors will be shown. He will also mark on this chart the ranges to all important localities in his front, as soon as these are determined. A copy of this sketch is given to the platoon leader, and to each of the squad leaders.

The three squads are deployed, as shown in the sketch, from right to left in the usual order, 2-1-3, with intervals between men of at least five yards—more if necessary for effective fire.

The "A" sector of the 2nd (right) squad is the right "A" sector of the group, covering the front of the next combat group to the right, and the unoccupied interval between groups. Its "B" sector is the right half of the "B" sector of the group (Plate 42). The "A" sector of the 1st (center) squad is the "B" sector of the group. It has two "B" sectors, one in front of each adjacent combat group. Half of the squad is assigned to each of these "B" sectors. The sectors of the 3rd (left) squad are similar to those of the 2nd. These assignments are indicated in Plate 42.

The commander finds, on examining the terrain, that there are two small areas (X and Y) in the near foreground, which are defiladed from the fire of his group. He marks these areas (by stakes and cloth, at their near edges), accurately determines their ranges (by pacing), and points them out to his squad leaders. They can be reached by rifle grenades should the enemy find a lodgment in them.

These dispositions effectively cover the sectors he has been ordered to defend. But the combat group commander realizes that, in case of a hostile penetration of the intervals on his right and left he may have need of fire directly to his flanks and even to the rear. To provide for this he adopts the following measures:

1. He places the automatic riflemen of the 2nd and 3rd squads on the outer flanks of these squads and at a corner of a fire-bay, where they can fire well to the rear if necessary and readily switch their fire from one direction to another. (See small insert, Plate 42.)

2. He provides a niche in the parados directly in rear of the automatic rifleman of the 1st squad from which position he can fire to the right and left rear, or directly to the rear, in emergency. This position will be occupied if the occasion arises.

3. He prepares portions of his trench for fire to the rear. In particular this fire will cover the flanks of the machine guns in rear.

4. If an approach trench leading into the area of the combat group from the support line is eventually installed, portions of this trench will be prepared for fire in either direction, and occupied in case of emergency.

Each squad will fire on any target appearing in its "A" sector, within a designated range. When no target appears in the "A" sector it will fire on any target appearing in its "B" sector.

As the combat group has no mobile reserve for counter attack, no counter attack plans are prepared.

The defense plans of the combat group are further discussed in detail in the course in Musketry.

ROUTINE OF DUTY IN THE TRENCHES.

Service in the trenches, especially in a stabilized position, requires the performance of a great number of routine duties, many of them similar in nature to those of the camp or garrison. Many of these duties are onerous, some of them appear to be unimportant, and there is a very strong tendency to neglect them, especially on the part of green troops under inexperienced officers, and in cases where positions are occupied for long periods. Yet the neglect of any of these duties may mean disaster in case of a hostile attack. The manner in which they are carried out, whether thoroughly or indifferently, marks the difference between a vigilant and a careless defense.

Most of these duties are not strictly of a tactical nature. Yet they are so intimately related to and so important in the conduct of the defense as to be deserving of mention in connection with that subject.

The responsibilities of each member of the platoon or combat group are very carefully defined. Commanders of all rank, from the squad leaders up, are responsible for the proper performance of duty by the men of their commands. This they insure by continuous inspection. The individual on whom rests the chief responsibility for the proper observance of routine duties is the platoon leader. The duties to be performed, and the manner in which they are carried out, will of course vary greatly with the situation. It will be sufficient to here mention the most important matters to which the platoon leader must devote his attention.

These matters will usually be prescribed by orders and regulations from higher command.

1. *Trench relief.* In a position which is occupied for any considerable period the front line units are relieved or replaced at intervals, in accordance with a systematic plan. The periods of duty in the front line trenches will vary with the weather and season, the number of troops available, the activity of the sector, condition of the troops as to training, morale and "seasoning," and other circumstances.

Having been designated for duty in the trenches the platoon leader inspects his command to see that his men are physically fit, and equipped in all respects as prescribed by orders.

The relief usually takes place by night. Prior to the time designated the platoon leader, accompanied by the platoon sergeant and a runner, makes an inspection by daylight of the area to be occupied by his platoon. He examines the defensive works and the terrain in all directions, noting all matters of tactical importance. He studies the plan of defense, and learns from the leader of the outgoing unit everything possible in connection with his duties.

The outgoing unit may furnish a guide to lead the platoon to its area. It remains in position until the incoming unit has arrived and taken over its duties.

The platoon leader causes all elements of his command to occupy their combat positions in order to familiarize them therewith. He explains to all subordinate leaders their duties in case of attack. He then causes the necessary sentinels, observers, etc., to be posted for the night, the remaining men being then allowed to occupy the shelters or rest positions.

2. *Plan of defense.* The platoon leader carefully studies the plan of defense of the combat group or groups comprised in his platoon. He sees that each combat group, section and squad leader is furnished with a defense chart (see Musketry), and that he knows his combat position and duties. As he becomes familiar with the

situation the platoon leader may recommend to his company commander any changes in the plan of defense which he thinks desirable.

3. *Plan of works. Maintenance of defenses.* This will include all new works or extensions which may have been ordered, and maintenance of all elements of the defensive organization. The platoon leader will prescribe the detail of working parties and the hours of labor, and will see that the necessary tools and materials are furnished. He will arrange for the examination of the obstacles in his area, and will report to his company commander any damage that he is unable to repair with the facilities at his disposal.

The platoon leader checks the tools at his disposal, and arranges for their storage and issue as required by working parties. He familiarizes himself with the arrangements for the supply of materials for defensive works, and provides for suitable storage places for such materials, within his area.

The various works to be constructed and the methods employed are described in detail in the course in Field Engineering.

4. *Adjacent units.* In connection with his own plan of defense the platoon leader should know the location, strength, and defense plans of all adjacent combat groups, and the arrangement for mutual support.

5. *Features of the terrain.* The leader should familiarize himself with the lay of the ground in his vicinity. He should determine the ranges to all important points and see that these are placed on the defense charts of the platoon and its subordinate units, and the range cards of snipers and observers.

6. *Hostile activities and works.* The leader should know and place on his defense charts all hostile works in his vicinity, especially machine gun and light mortar emplacements, observation and sniping posts, etc. He should be familiar with the habits of the enemy, his patrols and snipers, areas or points especially subject to fire of hostile snipers, etc.

NOTE.—In positions occupied for any considerable period a battle map, showing all hostile organization and works which have been located by patrols and observers, is maintained and kept up to date by the intelligence officer of each front line battalion.

7. *Supporting weapons.* The location and fields of fire of all supporting weapons, including machine guns, howitzer weapons, and artillery posted for close defense, should be known, as well as the means by which this supporting fire may be obtained. The line of the defensive barrage and the prescribed method of calling for it should also be known, as well as the location of the nearest artillery observation post.

8. *Intercommunication.* The platoon leader must know the available means of communication by which messages may be sent or received. He should make certain that his runners know the routes to the command posts of the company and adjacent combat groups. His subordinate leaders should know the location of the command posts of the company and battalion and adjacent units.

9. *Supply.* The leader should promptly learn the routine arrangements for supply, especially of ammunition, food and water. He arranges for the proper storage and care of such supplies within his own area, and their issue and distribution. He sees that the prescribed or necessary amounts of supplies of all classes are always on hand, and that no excess is accumulated. He should know the location of the rear echelon of the company and of all depots or dumps from which supplies are drawn, and the routes thereto. He provides for the necessary carrying parties from his own command. He gives notice in ample time to his company commander of a threatened shortage of necessary supplies—especially ammunition.

10. *Evacuation.* The location of the battalion aid station and the route for the evacuation of sick or wounded should be known.

All unserviceable supplies or materials should be evacuated at intervals to the designated receiving or salvage points in rear.

11. *Sanitation.* All parts of the area occupied by the platoon, including trenches, shelters, latrines, etc., should be maintained at all times in an orderly and sanitary

condition. Trenches should be drained and provided with trench boards if necessary. If the can system is used for latrines the cans must be systematically emptied and cleaned.

There should be proper facilities for washing, bathing, etc., and regulations as to the hours when they are to be used. Men in urgent need of de-lousing may be sent to the rear one at a time. The command as a whole should be de-loused, if necessary, upon relief from duty in the trenches.

12. *Gas.* Defensive measures against gas should be maintained, and a proper method of giving the alarm in case of a gas attack.

13. *Posts and duties of the command.* The platoon leader, in accordance with his plan of defense, prescribes the combat position of each squad and section. He arranges for the necessary observers and listeners, snipers and sentinels, by day and by night, their reliefs, reinforcement in case of fog, etc. He sees that one or more non-commissioned officers are always on duty in the trenches, and that there is a responsible n. c. o. (usually the platoon sergeant) on duty at the command post when the leader is absent or sleeping. He prescribes the positions of all men when off duty, and the limits within which they may move. If shelters are available he allots the space therein to squads and individuals, in accordance with the instructions of the company commander.

14. *Assemblies, alerts and "stand-bys."* In order to insure vigilance on the part of the defense there should be frequent assemblies or "stand-bys" in which all officers and men take their combat positions. These assemblies should take place at stated times, for example each morning and evening. In addition there should be occasional alarms or alerts, in which the men are called to their combat positions without previous warning.

At such times the leader notes the promptness with which all men repair to their positions and the causes for any delays, confusion or unnecessary exposure. He inspects his command while in position and insures:

a. That each section, squad or individual is in the correct position, that each knows the defense plan of his unit, and that each individual is in a favorable position for fire.

b. That each individual has with him his complete equipment as prescribed by orders, including arms, ammunition, gas mask, helmet, and that all are serviceable and properly cleaned.

c. That all men are physically fit for duty.

15. *Inspections.* At the time of assemblies in the combat position and at various other times by day and by night, the platoon leader should inspect the area occupied by his command. At such inspections he assures himself that all orders and regulations are being properly carried out, that all men are in their proper places, that all equipment, supplies and materials are sufficient, serviceable, and properly distributed, that no unauthorized articles of any kind are on hand, either in trenches or shelters or on the persons of the men, that all men have their personal arms and equipment with them, that the prescribed plan of works is being duly prosecuted and all items of the defensive organization properly maintained, that none of the command are absent or outside their prescribed limits if off duty, that shelters are not overcrowded. He fixes the responsibility and takes necessary corrective measures in case of any deficiencies or neglects.

16. *Duty rosters.* Most of the foregoing duties are performed by all members of the platoon. Certain of them, as observing and sniping, are performed by specially qualified men and men in training only. In order to insure an equitable distribution of periods of duty and rest the platoon leader causes duty rosters to be kept, usually by the platoon sergeant. When practicable a bulletin board is placed in a convenient central location, on which all details for duty and all special instructions are posted.

17. *Situation reports.* At stated intervals, usually prescribed by higher authority, the platoon leader will render to his next superior, verbally or in writing, situation reports on all matters of interest. These reports will usually be on a prescribed

form. In any case they should include the number of men present for duty, physical condition of the command, state of supply, progress made in construction of new works, activities of the enemy noted by the leader or by observers and sentinels, recommendations as to changes in the plan of defense, requests for necessary supplies not obtainable by the usual routine, etc.

The platoon leader should exercise his own initiative to the fullest in the conduct of the defense and the maintenance of his area. He should call upon his superiors for assistance only in cases which are clearly beyond his power or authority.

18. *Duties of subordinates.* The platoon leader may and should delegate to his subordinate leaders certain of the duties herein listed, and should hold them fully responsible for their performance. For example, the platoon sergeant may be charged with the keeping of rosters, regulating details for all duties, and supervising the work of labor parties. When the platoon is garrisoning two or more combat groups most of the duties herein prescribed will devolve upon the combat group commanders, under the general supervision of the platoon leader.

The platoon sergeant and section leaders should be informed as to all details of the plan of defense in order that they may be ready to assume command of the platoon in case of emergency.

19. *Additional duties.* In addition to the regular routine of guard, labor, etc., certain special duties may be prescribed by higher command. The most usual duties of this kind will be patrolling and observation beyond the limits of the area assigned to the platoon. These will generally be performed under the supervision of the battalion intelligence officer.

20. *Open warfare.* In open warfare much of the routine characteristic of stabilized positions long occupied, must of necessity be dispensed with. On the other hand, the facilities and time available will invariably be less and the difficulties to be encountered much greater. Accordingly a greater exercise of initiative and resourcefulness on the part of subordinate leaders will be demanded.

ANNOUNCEMENT.

The 4 volumes constituting the R. O. T. C. Manual have been written and published in a period of about a year.

Due to the great amount of research and labor required, it has been impossible to complete the subject of Minor Tactics prior to the date when it was necessary to go to press with this volume.

This is the last subject of the entire course, and it will be completed and published as a pamphlet during the coming fall. This pamphlet will be furnished *without additional charge* to all institutions subscribing to this volume, and to individual purchasers without charge upon request.

The subjects of "Offensive Combat" and "Defensive Combat" in this volume, will indicate the manner in which the remaining subjects will be treated. The complete text will include (in addition to the matter herein) the following:

Marches.

Advance Guards.

Flank Guards.

Withdrawal from Action.

Rear Guards.

Outposts.

Machine Guns in Offensive Combat.

Machine Guns in Defensive Combat.

Howitzer Weapons in Offensive Combat.

Howitzer Weapons in Defensive Combat.

General Review.

Appendices (many additional subjects).

The pamphlet containing these items will be included in the next edition of Volume IV.

E. B. GAREY.

APPENDIX A.

Organization Tables.

Infantry Division at War Strength.

(As issued by the War Dept., 1921.)

I.—INFANTRY DIVISION (Consolidated Table).

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
|----|---|----------------------------|---------------------------|-----------------------------------|-----------------------------------|--|----------------------------------|----------------------------------|----------------------------|-------|---------------------------|-----------|-----------|
| | UNITS | Division Hdqrs. (Table 2W) | Special Troops (Table 3W) | Two Infantry Brigades (Table 21W) | One Artillery Brigade (Table 31W) | One Combat Engineer Regiment (Table 63W) | Division Air Service (Table 71W) | One Medical Regiment (Table 83W) | Division Train (Table 91W) | Total | Medical Dept. (Table 90W) | Chaplains | Aggregate |
| 2 | Total Commissioned | 388 | 32 | 434 | 146 | 36 | 38 | 67 | 19 | 812 | 79 | 14 | 906 |
| 3 | Total Warrant Officers | | 12 | 6 | 4 | 1 | | | | 24 | | | 24 |
| 4 | Total Enlisted | | 856 | 11976 | 3118 | 808 | 190 | 860 | 747 | 18583 | 515 | | 19667 |
| 5 | Aggregate | 38 | 900 | 12416 | 3268 | 815 | 228 | 928 | 766 | 19289 | 534 | 14 | 19947 |
| 6 | Horses, draft | | 16 | 4 | 1530 | | | 15 | | 1556 | | | 1576 |
| 7 | Horses, riding | | 105 | 490 | 1157 | 78 | | 86 | 7 | 1923 | 159 | 11 | 2093 |
| 8 | Mules, draft | | 62 | 1582 | 560 | 182 | | 102 | 512 | 3010 | 180 | | 3130 |
| 9 | Mules, pack | | | | | 16 | | | | 16 | | | 16 |
| 10 | Mules, riding | | 2 | 62 | 19 | 10 | | | 24 | 127 | | | 127 |
| 11 | Ambulance animal drawn | | | | | | | 20 | | 20 | | | 20 |
| 12 | Carts, Ammunition, 37mm. | | | 24 | | | | | | 24 | | | 24 |
| 13 | Carts, Ammunition, M.C. | | | 96 | | | | | | 96 | | | 96 |
| 14 | Carts, M. G. gun | | | 96 | | | | | | 96 | | | 96 |
| 15 | Carts, mortar | | | 12 | | | | | | 12 | | | 12 |
| 16 | Carts, ration | | 5 | 74 | 20 | | | | | 99 | | | 99 |
| 17 | Carts, reel, battery, 4horse | | | | 12 | | | | | 12 | | | 12 |
| 18 | Carts and reels, 6 horse | | | | 7 | | | | | 7 | | | 7 |
| 19 | Carts, water | | 2 | 74 | 20 | 7 | | | | 103 | 4 | | 107 |
| 20 | Carts, wire | | 4 | 2 | | | | | | 6 | | | 6 |
| 21 | Kitchens, rolling | | 6 | 74 | 21 | 7 | | | | 108 | | | 108 |
| 22 | Wagons, battery | | | | 12 | | | | | 12 | | | 12 |
| 23 | Wagons, combined battery & store | | | | 6 | | | | | 6 | | | 6 |
| 24 | Wagons, escort | | 8 | 182 | 96 | 11 | | 4 | 124 | 425 | 4 | | 429 |
| 25 | Wagons, medical | | | | | | | | | | 26 | | 26 |
| 26 | Wagons, spring | | | | 18 | | | 1 | | 19 | | | 19 |
| 27 | Wagons, store | | | | 12 | | | | | 12 | | | 12 |
| 28 | Wagons, tool | | | | | 24 | | | | 24 | | | 24 |
| 29 | Ambulances, motor | | | | | | | 40 | | 40 | 6 | | 46 |
| 30 | Bicycles | | 18 | 112 | 20 | 15 | | 25 | | 190 | 9 | | 199 |
| 31 | Cars, motor, 5-passenger | | 3 | 8 | 6 | 2 | 2 | 11 | 21 | 58 | | | 53 |
| 32 | Cars, motor, 7-passenger | | | | | | | | | 2 | | | 2 |
| 33 | Cars, reconnaissance | | | | 4 | | | | | 4 | | | 4 |
| 34 | Motorcycles, solo | | | | | | | | | 2 | | | 2 |
| 35 | Motorcycles, with side cars | | 26 | 52 | 37 | 16 | 8 | 11 | 39 | 189 | 23 | | 212 |
| 36 | Tractors, 5 ton | | | | | | | | 2 | 2 | | | 2 |
| 37 | Trailers, cargo, 1½ ton | | | | | | 6 | | | 6 | | | 6 |
| 38 | Trailers, kitchen | | 3 | | 1 | | | 10 | 4 | 19 | 4 | | 23 |
| 39 | Trailers, photographic, 5 ton | | | | | | 2 | | | 2 | | | 2 |
| 40 | Trailers, radio | | | 6 | | | | | | 6 | | | 6 |
| 41 | Trailers, ration, 3/4 ton | | 1 | | | | | | | 1 | | | 1 |
| 42 | Trailers, spare parts, medical | | | | | | | 2 | | 2 | | | 2 |
| 43 | Trailers, stockroom | | | | | | | | 2 | 2 | | | 2 |
| 44 | Trailers, storage battery | | 1 | | | | | | | 1 | | | 1 |
| 45 | Trailers, tank, 300 gal. | | 2 | | | | 2 | 10 | | 14 | 4 | | 18 |
| 46 | Trailers, tire press, 5 ton | | | | | | | | 2 | 2 | | | 2 |
| 47 | Trucks, artillery, repair | | 4 | | | | | | | 4 | | | 4 |
| 48 | Trucks, artillery supply, Load A | | | | 1 | | | | | 1 | | | 1 |
| 49 | Trucks, artillery supply, Load B | | 3 | | | | | | | 3 | | | 3 |
| 50 | Trucks, artillery supply, Load D | | 4 | | | | | | | 4 | | | 4 |
| 51 | Trucks, cargo, 3/4 ton | | 8 | 10 | 3 | 3 | | 34 | 13 | 71 | 3 | | 74 |
| 52 | Trucks, cargo, 1½ - 2 ton | | 18 | 6 | | 18 | 12 | 62 | 110 | 226 | | | 226 |
| 53 | Trucks, cargo, 3-5 ton | | 3 | | | | | | 2 | 5 | | | 5 |
| 54 | Trucks, E.W.D. | | | | 30 | | | | | 30 | | | 30 |
| 55 | Trucks, field lighting | | | | | | 1 | | | 1 | | | 1 |
| 56 | Trucks, light repair | | 2 | | 1 | | | | | 3 | | | 3 |
| 57 | Trucks, Mack, with reinforced springs, 5½ ton | | 25 | | | | | | | 25 | | | 25 |
| 58 | Trucks, M.T. machine shop | | | | | 1 | | | 2 | 3 | | | 3 |
| 59 | Trucks, patrol, 3/4 ton | | 1 | | | | | | | 1 | | | 1 |
| 60 | Trucks, photographic | | | | | | 2 | | | 2 | | | 2 |
| 61 | Trucks, radio, Air Service | | | | | | 1 | | | 1 | | | 1 |
| 62 | Trucks, radio, army | | 1 | | | | | | | 1 | | | 1 |
| 63 | Trucks, radio, divisional | | 1 | | | | | | | 1 | | | 1 |
| 64 | Trucks, radio repair | | | | | | 1 | | | 1 | | | 1 |
| 65 | Trucks, small arms repair | | 2 | | | | | | | 2 | | | 2 |
| 66 | Trucks, tank, 750 gal. | | 2 | | | | | | 10 | 15 | | | 15 |
| 67 | Trucks, tank, gas, 3/4 ton | | | | | 3 | | | | 3 | | | 3 |
| 68 | Trucks, tank, water, 3/4 ton | | | | | 1 | | | | 1 | | | 1 |
| 69 | Trucks, wrecking | | | | | | | | 2 | 2 | | | 2 |
| 70 | Airplanes | | | | | | 13 | | | 13 | | | 13 |
| 71 | Caissons, 75mm. | | | | 144 | | | | | 144 | | | 144 |
| 72 | Guns, 37mm. | | 10 | 12 | | | | | | 22 | | | 22 |
| 73 | Guns, 75mm. | | | | 48 | | | | | 48 | | | 48 |
| 74 | Guns, machine | | 14 | 96 | | | | | | 110 | | | 110 |
| 75 | Guns, machine, anti-aircraft | | | | 42 | | 3 | | | 45 | | | 45 |
| 76 | Guns, machine, flexible | | | | | | 26 | | | 26 | | | 26 |
| 77 | Guns, machine, synchronized | | | | | | 26 | | | 26 | | | 26 |
| 78 | Mortars, 3 inch | | | 24 | | | | | | 24 | | | 24 |
| 79 | Pistols | 38 | 704 | 5140 | 3268 | 214 | 228 | | 206 | 9798 | | | 9798 |
| 80 | Rifles | | 134 | 6950 | | 631 | | | 570 | 8285 | | | 8285 |
| 81 | Rifles, automatic | | | 648 | 120 | 24 | | | | 792 | | | 792 |
| 82 | Rifles, with grenade discharges | | | 648 | | | | | | 648 | | | 648 |
| 83 | Tanks, fighting, light | | 24 | | | | | | | 24 | | | 24 |
| 84 | Tanks, signal, light | | 1 | | | | | | | 1 | | | 1 |

REMARKS.

(a) Exclusive of 2 Chaplains carried in Column 12.

II.—SPECIAL TROOPS, INFANTRY DIVISION.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | | |
|----|--|------------------------------|---------------|--------------|------------------------------------|-----------------------------------|-----------------------------------|--|-------------------------------------|---------------------------------------|-------|------------------|-----------|-----|
| 1 | UNITS | Specialist Rating
(Class) | Symbol Number | Headquarters | Headquarters Company
(Table 4W) | Signal Company
(Table 8 P & W) | Light Tank Company
(Table 10W) | Ordnance Company
(Maintenance)(Table 12W) | Service Company (QMC)
(Table 9W) | Military Police Company
(Table 5W) | Total | Attached Medical | Aggregate | |
| 2 | Lieutenant Colonel or Major | | | a1h | | | | | | 1 | | 1 | | |
| 3 | Captains | | | b2h | 1 | 1 | 1 | 1 | | 1 | | | | |
| 4 | First Lieutenants | | | | 1 | 3 | 3 | 3 | | 31 | 1 | 34 | | |
| 5 | Second Lieutenants | | | | 1 | 3 | 3 | 3 | 2 | 2 | | | | |
| 6 | Total Commissioned | | | c3 | 3 | 6 | 6 | 7 | 2 | 5 | 32 | 5 | 35 | |
| 7 | Warrant Officers | | | | 12 | | | | | | 12 | | 12 | |
| 8 | Master Sergeants | | | | 1 | 2 | | 1 | | | 4 | | 4 | |
| 9 | Technical Sergeants | | | | 6 | 2 | | 2 | | | 10 | | 10 | |
| 10 | First Sergeants | | | | 1 | 1 | 1 | 1 | 1 | 1 | 6 | | 6 | |
| 11 | Staff Sergeants | | | d2 | 9 | 7 | 4 | 2 | | | 23 | 1 | 24 | |
| 12 | Sergeants | | | e1 | 19 | 11 | 6 | 4 | 6 | 11 | 58 | 1 | 69 | |
| 13 | Corporals | | | | 1 | 11 | 15 | 26 | 5 | 8 | 61 | 1 | 82 | |
| 14 | Privates, 1st class | | | | 2 | 63 | 36 | 36 | 50 | 26 | 100 | 23 | 297 | |
| 15 | Privates | | | | 2 | 89 | 76 | 72 | 60 | 59 | 22 | 361 | 369 | |
| 16 | Miscellaneous | 1st | | | (5) | | | (5) | | | | | | |
| 17 | Miscellaneous | 2nd | | | (7) | | | (7) | | | | | | |
| 18 | Miscellaneous | 3rd | | | (11) | (3) | (7) | (8) | | | | | | |
| 19 | Miscellaneous | 4th | | | (17) | (3) | (20) | (13) | (1) | (2) | | (15) | | |
| 20 | Miscellaneous | 5th | | | (21) | (6) | (9) | (19) | (10) | (1) | (4) | | | |
| 21 | Miscellaneous | 6th | | | (34) | (61) | (30) | (17) | (3) | (23) | | (40) | | |
| 22 | Miscellaneous | | | | (82) | (94) | (36) | (32) | (20) | (80) | (94) | | | |
| 23 | Total Enlisted | | | | 18 | 198 | 150 | 145 | 105 | 100 | 150 | 856 | 15 | 871 |
| 24 | Aggregate | | | | 11 | 213 | 156 | 151 | 112 | 102 | 155 | 900 | 18 | 918 |
| 25 | Horses, draft | | | | | 16 | | | | | 16 | | 16 | |
| 26 | Horses, riding | | | | 3 | 64 | 13 | | | 2 | 23 | 105 | 6 | 111 |
| 27 | Mules, draft | | | | | 44 | | | 8 | 10 | 62 | 4 | 66 | |
| 28 | Mules, riding | | | | | 2 | | | | | | | 2 | |
| 29 | Carts, ration, 2-mule | | | | | 2 | | | | 1 | 5 | | 6 | |
| 30 | Carts, water, 2-mule | | | | | 2 | | | | | 2 | | 2 | |
| 31 | Carts, wire, 2-horse | | | | | | 4 | | | | 4 | | 4 | |
| 32 | Kitchens, rolling, 4-mule | | | | 4 | | | | 1 | 1 | 6 | | 6 | |
| 33 | Wagons, escort (combat) | | | | | 2 | | | | | 2 | | 2 | |
| 34 | Wagons, escort (H & M) | | | | 4 | | | | 1 | 1 | 6 | | 6 | |
| 35 | Wagons, medical, 4-mule | | | | | | | | | | | 1 | 1 | |
| 36 | Bicycles | | | | 6 | | | | | 12 | 18 | 1 | 19 | |
| 37 | Cars, motor, 5-passenger | | | | | 1 | 1 | | | 1 | 3 | | 3 | |
| 38 | Motorcycles with side cars | | | | | 9 | 2 | 4 | 1 | 10 | 26 | 1 | 27 | |
| 39 | Trailers, kitchen | | | | | 1 | 1 | 1 | | | 3 | | 3 | |
| 40 | Trailers, ration, 3/4 ton | | | | | 1 | 1 | | | | 1 | | 1 | |
| 41 | Trailers, tank, 300 gal. | | | | | 1 | 1 | | | | 2 | | 2 | |
| 42 | Trailers, storage battery | | | | | 1 | 1 | | | | 1 | | 1 | |
| 43 | Trucks, Artillery Repair | | | | | | 1 | 3 | | | 4 | | 4 | |
| 44 | Trucks, Artillery Supply, Load B | | | | | | 1 | 3 | | | 4 | | 4 | |
| 45 | Trucks, Artillery Supply, Load D | | | | | | 1 | 3 | | | 4 | | 4 | |
| 46 | Trucks, cargo, 3/4 ton | | | | | 5 | 1 | 2 | | | 8 | | 8 | |
| 47 | Trucks, cargo, 1 1/2 ton | | | | 3 | 9 | 6 | | | | 18 | | 18 | |
| 48 | Trucks, cargo, 3 ton | | | | | | | 3 | | | 3 | | 3 | |
| 49 | Trucks, gasoline, 750 gal. | | | | | | 1 | 1 | | | 2 | | 2 | |
| 50 | Trucks, Mack (5 1/2 ton) with reinforced springs | | | | | | 25 | | | | 25 | | 25 | |
| 51 | Trucks, light repair | | | | | | | 2 | | | 2 | | 2 | |
| 52 | Trucks, patrol, 3/4 ton | | | | | | | | 1 | | 1 | | 1 | |
| 53 | Trucks, radio, army | | | | | 1 | | | | | 1 | | 1 | |
| 54 | Trucks, radio, divisional | | | | | 1 | | | | | 1 | | 1 | |
| 55 | Trucks, Small Arms repair | | | | | | | 2 | | | 2 | | 2 | |
| 56 | Guns, 37mm. | | | | | | 10 | | | | 10 | | 10 | |
| 57 | Guns, machine | | | | | | 14 | | | | 14 | | 14 | |
| 58 | Pistols | | | | 11 | 209 | 156 | 151 | 22 | 155 | 704 | | 704 | |
| 59 | Rifles | | | | 44 | | | | 90 | | 134 | | 134 | |
| 60 | Tanks, fighting, light | | | | | | 24 | | | | 24 | | 24 | |
| 61 | Tanks, Signal, light | | | | | | 1 | | | | 1 | | 1 | |

REMARKS.

- (a) Commanding Officer, Special Troops, Division Headquarters Commandant, and Provost Marshal.
 (b) 1 Adjutant and 1 Supply Officer.
 (c) From Detached Officers' List.
 (d) 1 Sergeant Major and 1 Supply Sergeant.
 (e) Personnel Records.
 (f) Cobbler.
 (g) 1 Storekeeper, 1 Mail Clerk, 1 Miscellaneous.
 (h) Mounted on horse.
 (i) From Infantry.
 (k) Medical Dept. Technician.

- (m) 1 Wagoner and 3 Medical Dept. Technicians (incl. 1 dental).
 (z) Dental.

(A.) The units comprising the Special Troops, Infantry Division, are combined under the command of the Commanding Officer, Special Troops, primarily for administration and discipline. This officer is responsible for the technical training and operation of the Headquarters Company and Military Police Company, but not for the technical training and operations of the Signal Company, Light Tank Company, Ordnance Company, and Service Company.

III.—INFANTRY BRIGADE (Consolidated Table).

| 1 | Units. | Specialist Rating (Class) | Symbol Number | Headquarters | Headquarters Company | Two Regiments | Total Brigade | Attached, Medical Dept. | Attached Chaplains | Aggregate |
|----|----------------------------------|---------------------------|---------------|--------------|----------------------|---------------|---------------|-------------------------|--------------------|-----------|
| 2 | Brigadier General | | | 1 | | | 1 | | | 1 |
| 3 | Colonels | | | | | 2 | 2 | | | 2 |
| 4 | Lieutenant Colonels | | | | | 8 | | | | |
| 5 | Majors | | | 1 | | 8 | 17 | 2 | | |
| 6 | Captains | | | | | 38 | | | | |
| 7 | First Lieutenants | | | 8 | 1 | 100 | 197 | 20 | 4 | 240 |
| 8 | Second Lieutenants | | | | | 50 | | | | |
| 9 | Total Commissioned | | | 10 | 1 | 206(34x) | 217 | 22 | 4 | 243 |
| 10 | Warrant Officers | | | | 1 | 2 | 3 | | | 3 |
| 11 | Master Sergeants | | | | 2 | 8 | 10 | | | 10 |
| 12 | Technical or First Sergeants | | | | 1 | 32 | 33 | 2 | | 35 |
| 13 | Staff Sergeants | | | | 3 | 15 | 19 | 6 | | 25 |
| 14 | Sergeants | | | | 6 | 394 | 400 | 12 | | 412 |
| 15 | Corporals | | | | 6 | 688 | 694 | 8 | | 702 |
| 16 | Privates 1st Class | incl. | | | 38 | 1574 | 1612 | | | |
| 17 | Privates | | | | 32 | 3188 | 3220 | 146 | | 4978 |
| 18 | Miscellaneous | 1st | | | | | | | | |
| 19 | Miscellaneous | 2nd | | | | (8) | (8) | (2) | | |
| 20 | Miscellaneous | 3rd | | | | (2) | (16) | (18) | (2) | |
| 21 | Miscellaneous | 4th | | | | (3) | (126) | (129) | (10) | |
| 22 | Miscellaneous | 5th | | | | (6) | (132) | (138) | (2) | |
| 23 | Miscellaneous | 6th | | | | (10) | (444) | (454) | (32) | |
| 24 | Miscellaneous | | | | | (49) | (4036) | (4085) | (98) | |
| 25 | Total Enlisted | | | | 88 | 5900c | 5988 | 174 | | 6162 |
| 26 | AGGREGATE | | | 10 | 90 | 6108 | 6208 | 195 | 4 | 6408 |
| 27 | Horses, riding | | | 10 | 11 | 224 | 245 | 28 | 4 | 277 |
| 28 | Horses, draft | | | | 2 | | 2 | | | 2 |
| 29 | Mules, draft | | | | 12 | 784 | 796 | 44 | | 840 |
| 30 | Mules, riding | | | | 1 | 30 | 31 | | | 31 |
| 31 | Total Animals | | | 10 | 26 | 1038 | 1074 | 72 | 4 | 1150 |
| 32 | Carts, ammunition, 37 mm. | | | | | 12 | 12 | | | 12 |
| 33 | Carts, ammunition, M.G. | | | | | 48 | 48 | | | 48 |
| 34 | Carts, Machine Gun, gun | | | | | 48 | 48 | | | 48 |
| 35 | Carts, mortar, 1 mule | | | | | 6 | 6 | | | 6 |
| 36 | Carts, ration, 2 mule | | | 1 | 36 | 37 | | | | 37 |
| 37 | Carts, water, 2 mule | | | 1 | 36 | 37 | | 2 | | 39 |
| 38 | Carts, wire, 2 horse | | | 1 | | 1 | | | | 1 |
| 39 | Kitchens, rolling, 4 mule | | | 1 | 36 | 37 | | | | 37 |
| 40 | Wagons, combat, 4 mule | | | | 38 | 38 | | | | 38 |
| 41 | Wagons, escort, (R & B) 4 mule | | | 1 | 52 | 53 | | 2 | | 55 |
| 42 | Wagons, medical, 4 mule | | | | | | | 8 | | 8 |
| 43 | Bicycles | | | | 6 | 50 | 56 | 2 | | 58 |
| 44 | Cars, motor, 5 passenger | | | | 2 | 2 | 4 | | | 4 |
| 45 | Motorcycles, with side cars | | | | 4 | 22 | 26 | 8 | | 34 |
| 46 | Trailer, radio | | | | 1 | 2 | 3 | | | 3 |
| 47 | Trucks, cargo, 3/4 ton | | | | 1 | 4 | 5 | | | 5 |
| 48 | Trucks, cargo, 1 1/2 - 2 ton | | | | 1 | 2 | 3 | | | 3 |
| 49 | Guns, 37 mm. | | | | | 6 | 6 | | | 6 |
| 50 | Guns, machine | | | | | 48 | 48 | | | 48 |
| 51 | Mortars, 3 inch | | | | | 12 | 12 | | | 12 |
| 52 | Pistols | | | 10 | 62 | 2498 | 2570 | | | 2570 |
| 53 | Rifles | | | | 41 | 3434 | 3475 | | | 3475 |
| 54 | Rifles, automatic | | | | | 324 | 324 | | | 324 |
| 55 | Rifles, with grenade dischargers | | | | | 324 | 324 | | | 324 |

REMARKS.

- (c) Additional strength for each Reg't not part of a Division:
 3 Privates 1st Cl.—rated 6th Class. 3 Wagons (R. & B.) escort, 4-mule.
 3 Privates. 12 Mules, draft.

IV.—HEADQUARTERS AND HEADQUARTERS COMPANY, INFANTRY BRIGADE.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|----|---------------------------------|---------------------------|---------------|--------------|----------------------|---------------|----------------------|------------------------|------------------------|----------------|-----------------|--------------|-----------------------|----------------|---------------|---------------|-----------|
| 1 | Units | Specialist Rating (Class) | Symbol Number | Headquarters | Headquarters Company | | | | | | | | | | | | |
| | | | | | Company Headquarters | Staff Section | Intelligence Section | Transportation Section | Communications Platoon | | | | | | | | |
| | | | | | | | | | Platoon Headquarters | Message Center | Courier Section | Wire Section | Radio & Panel Section | Visual Section | Total Platoon | Total Company | Aggregate |
| 2 | Brigadier General | | | 1lb | | | | | | | | | | | | | 1 |
| 3 | Lieutenant Colonel or Major | | | 1 | | | | | | | | | | | | | 1 |
| 4 | Brigade Executive | | | (1h) | | | | | | | | | | | | | |
| 5 | Captains or Lieutenants, incl | | | 4 | | | | | | | | | | | | | 4 |
| 6 | Brigade Staff | | | (4ho) | (1d) | | | | | | | | | | | | |
| 7 | Lieutenants, incl. | | | 4 | | | | | 1 | | | | | | 1 | 1 | 5 |
| 8 | Aides | | | (2b) | | | | | | | | | | | | | |
| 9 | Contact Officers | | | (2h) | | | | | | | | | | | | | |
| 10 | Platoon Commanders | | | | | | | | (1h) | | | | | | | | |
| 11 | Total Commissioners | | | 10 | | | | | 1 | | | | | | 1 | 1 | 11 |
| 12 | Warrant Officers | | | | | 1 | | | | | | | | | | 1 | 1 |
| 13 | Master Sergeants, incl. | | | | | 1 | | | 1 | | | | | | 1 | 2 | 2 |
| 14 | Sergeant Major | | | (1h) | | | | | | | | | | | | | |
| 15 | Master Signal Electrician | | | | | | | | (1h) | | | | | | | | |
| 16 | First Sergeant | | | 1 | | | | | | | | | | | | 1 | 1 |
| 17 | Staff Sergeants, incl. | | | | | 1 | | | | | | 1 | 1 | | 2 | 3 | 3 |
| 18 | Section Chiefs | | | | | (1e) | | | | | | (1) | (1) | | | | |
| 19 | Sergeants, incl. | | | 1 | | 1 | 1 | | 1 | 1 | | 1 | | | 3 | 6 | 6 |
| 20 | Construction | | | | | | | | | | | (1) | | | | | |
| 21 | Interpreter and Clerk | | | | | (1) | | | | | | | | | | | |
| 22 | House and Supply | | | | | | | | | | | | | | | | |
| 23 | Section Chiefs | | | (1) | | | | (1m) | | | | | | | | | |
| 24 | Corporals, incl. | | | 1 | | | | | 1 | (1h) | | | | | | | |
| 25 | Assistant Section Chiefs | | | | | | | | 1 | | (1h) | | 1 | 2 | 1 | 5 | 5 |
| 26 | Company Clerk | | | (1) | | | | | | (1) | | | | | | | |
| 27 | Operators | | | | | | | | | | | | | | | | |
| 28 | Fvts, 1st Cl. & Fvts., incl. | | | 5 | 4 | 3 | 10 | | 4 | 18 | 18 | 7 | 6 | 48 | 70a | 70 | |
| 29 | Sector | | | (1) | | | | | | | | | | | | | |
| 30 | Chauffeurs | 5th | | | | | | (3) | | | | | | | | | |
| 31 | Clerks | 3rd | | | | (1) | | | | | | | (1) | | | | |
| 32 | Clerks | 5th | | | | | (1) | | | | | | | | | | |
| 33 | Cobbler | | | (1) | | | (1) | | | | | | | | | | |
| 34 | Cooks (First) | 4th | | (1) | (1f) | | | | | | | | | | | | |
| 35 | Cooks (1st) | 5th | | (1) | | | | | | | | | | | | | |
| 36 | Horse-shoer | 4th | | | | | (1) | | | | | | | | | | |
| 37 | Line Guards | | | | | | | | | | | | (6) | | | | |
| 38 | Messengers (Motorcycle) | 6th | | | | | | | | | | (4) | | | | | |
| 39 | Messengers | | | | | (2f) | | | | | | (41) | | | | | |
| 40 | Operators | 6th | | | | | | | | | | | | | | | |
| 41 | Flakmen | | | | | | | | | | | | | | | | |
| 42 | Stenographer | 3rd | | | (1) | | | | | | | (1) | (1) | (1) | | | |
| 43 | Mailor | | | (1) | | | | | | | | (2h) | | | | | |
| 44 | Wagoners | 6th | | | | | (3) | | | | | | | | | | |
| 45 | Wagoners | | | | | | (3) | | | | | | | | | | |
| 46 | Miscellaneous | | | | (1f) | | | | | (41) | | (2) | (5) | (5) | | | |
| 47 | Total Enlisted | | | 8 | 5 | 5 | 11 | 1 | 6 | 19 | 16 | 10 | 7 | 59 | 88 | 88 | |
| 48 | AGGREGATE | | | 10 | 8 | 6 | 5 | 11 | 2 | 6 | 19 | 16 | 10 | 7 | 90 | 90 | 100 |
| 49 | Horses, riding | | | 10 | 1 | | | | 2 | | 8 | 2 | | | 12 | 15 | 23 |
| 50 | Horses, draft | | | | | | | | | | | | | | 2 | 2 | 2 |
| 51 | Mules, draft | | | | | | | | | | | | | | 12 | 12 | |
| 52 | Mules, riding | | | | | | | | | | | | | | 1 | 1 | |
| 53 | Total Animals | | | 10 | 1 | | | | 13 | 2 | 8 | 4 | | | 14 | 28 | 38 |
| 54 | Carts, ration, 2 mule | | | | | | | | 1 | | | | | | 1 | 1 | |
| 55 | Carts, water, 2 mule | | | | | | | | | | | | | | 1 | 1 | |
| 56 | Carts, wire, 2 horse | | | | | | | | | | | | | | 1 | 1 | |
| 57 | Rickshaws, rolling, 4 mule | | | | | | | | 1 | | | | | | 1 | 1 | |
| 58 | Wagons, escort, (2 & 3), 4 mule | | | | | | | | | | | | | | 1 | 1 | |
| 59 | Bicycles | | | | | | 2 | | | | 4 | | | | 4 | 6 | 6 |
| 60 | Cars, motor, 5 passenger | | | | | | | | 2 | | | | | | 2 | 2 | |
| 61 | Motorcycles, with side cars | | | | | | | | | | 4 | | | | 4 | 4 | |
| 62 | Trailer, radio | | | | | | | | | | | | | | 1 | 1 | |
| 63 | Truck, cargo, 3/4 ton | | | | | | | | 1 | | | | | 1 | 1 | 1 | |
| 64 | Truck, cargo, 12 - 2 ton | | | | | | | | | | | | | | 1 | 1 | |
| 65 | Pistols | | | 10 | 3 | 3 | 3 | 1 | 2 | 1 | 16 | 15 | 10 | 7 | 52 | 52 | 72 |
| 66 | Rifles | | | | 5 | 3 | 2 | 10 | | 5 | 10 | 6 | | | 21 | 41 | 41 |

REMARKS.

(h) Mounted on horse.
 (m) Mounted on mule.
 (a) Includes:
 38 Fvts, 1st Cl. 32 Privates.
 Summary of Specialist Ratings:
 3rd Class, 2. 5th Class, 6.
 4th Class, 3. 6th Class, 10.
 (b) Brigade Commander and Aides taken from
 General Officers' and Detached Officers' Lists.
 (c) Brigade Staff consists of:
 Adjutant.
 Intelligence Officer.

(c) Brigade Staff—Continued.
 Plans and Training Officer.
 Supply Officer.
 (d) Staff Officer commands Headquarters Com-
 pany. Not included in totals.
 (e) Also Topographical draftsman.
 (f) Hq. Officers' Mess.
 (g) Also Bicycleists and Orderlies.
 (i) 7 mounted on horse. 3 runners and Order-
 lies. 4 Bicycleists.
 (j) Includes necessary clerks, pigeon men and
 orderlies.

V.—INFANTRY REGIMENT (Consolidated Table).

| 1 | Units | Specialist Rating (Class) | Symbol Number | Headquarters | Headquarters Company | Service Company | Howitzer Company | Three Battalions | Total Regiment | Attached, Medical Dept. | Attached, Chaplains | Aggregate | Additional (o) |
|----|----------------------------------|---------------------------|---------------|--------------|----------------------|-----------------|------------------|------------------|----------------|-------------------------|---------------------|-----------|----------------|
| 2 | Colonel | | | 1 | | | | 3 | 1 | | | 1 | |
| 3 | Lieutenant Colonels | | | 1 | | | | 3 | 4(3x) | 1 | | 4 | |
| 4 | Majors | | | 1 | | | | 12 | 19 | 6h | | | |
| 5 | Captains | | | 4 | 1 | 1 | 1 | 42(12250)(137) | 10 | 2A | 2 | 86 | |
| 6 | First Lieutenants | | | 1 | 1 | 4(1x) | 2 | 21 | 25(1x) | | | 28 | |
| 7 | Second Lieutenants | | | 1x | 1 | 1 | 1 | 81(15x) | 103(17x) | 11 | 2 | 116 | |
| 8 | Total Commissioned | | | 9(1x) | 3 | 6(1x) | 4 | 81(15x) | 103(17x) | 11 | 2 | 116 | |
| 9 | Warrant Officers | | | | | 1 | | 1 | 1 | | | 1 | |
| 10 | Master Sergeants | | | | 1 | 3 | | 4 | 4 | | | 4 | |
| 11 | Technical or First Sergeants | | | | 2 | 1 | 1 | 18 | 16 | 1h | | 17 | |
| 12 | Staff Sergeants | | | | | 5 | | 3 | 8 | 2h | | 11 | |
| 13 | Sergeants | | | | 12 | 18 | 5 | 152 | 197 | 1vh | | 203 | |
| 14 | Corporals | | | | 14 | 8 | 13 | 309 | 344 | 4 | | 348 | |
| 15 | Privates 1st Class | | | | 40 | 67 | 26 | 654 | 787 | 2h | | | |
| 16 | Privates | | | | 52 | 171 | 60 | 1311 | 1554 | 3v | 73 | 2454 | 3 |
| 17 | Miscellaneous | 1st | | | | | | | | | | | |
| 18 | Miscellaneous | 2nd | | | | (4) | | | (4) | (1t) | | | |
| 19 | Miscellaneous | 3rd | | | | (8) | | | (8) | (1t) | | | |
| 20 | Miscellaneous | 4th | | | | (11) | (17) | (2) | (33) | (5e) | | | |
| 21 | Miscellaneous | 5th | | | | (4) | (27) | (2) | (33) | (1f) | | | |
| 22 | Miscellaneous | 6th | | | | (14) | (66) | (7) | (135) | (222) | (16g) | | |
| 23 | Miscellaneous | | | | | (63) | (116) | (75) | (1764) | (2018) | (49) | | (3) |
| 24 | Total Enlisted | | | | | 121 | 273 | 165 | 2451 | 2950 | 87 | 3037 | 6 |
| 25 | AGGREGATE | | | 9 | 124 | 280 | 109 | 2532 | 3054 | 98 | 2 | 3154 | 6 |
| 26 | Horses, riding | | | 9 | 13 | 13 | 8 | 69 | 112 | 14 | 2 | 128 | |
| 27 | Mules, draft | | | | | 332 | 12 | 48 | 392 | 22 | | 414 | 12 |
| 28 | Mules, riding | | | | | | 9 | 3 | 15 | | | 15 | |
| 29 | Total Animals | | | 9 | 13 | 354 | 23 | 120 | 519 | 36 | 2 | 557 | 12 |
| 30 | Carts, ammunition, 37 mm. | | | | | | 6 | | 6 | | | 6 | |
| 31 | Carts, ammunition, 100 | | | | | | | 24 | 24 | | | 24 | |
| 32 | Carts, machine gun, gun | | | | | | | 24 | 24 | | | 24 | |
| 33 | Carts, ration, 2 mule | | | | | 18 | | | 18 | | | 18 | |
| 34 | Carts, water, 2 mule | | | | | 18 | | | 18 | 1 | | 19 | |
| 35 | Carts, mortar, 1 mule | | | | | | 3 | | 3 | | | 3 | |
| 36 | Kitchens, rolling, 4 mule | | | | | 18 | | | 18 | | | 18 | |
| 37 | Wagons, combat, 4 mule | | | | | 19 | | | 19 | | | 19 | |
| 38 | Wagons, Escort, (R & B) 4 mule | | | | | 25 | | | 25 | 1 | | 27 | 3 |
| 39 | Wagons, medical, 4 mule | | | | | | | | | 4 | | 4 | |
| 40 | Bicycles | | | | 3 | | 4 | 18 | 25 | 1 | | 26 | |
| 41 | Cars, motor, 5 passenger | | | | 1 | | | | 1 | | | 1 | |
| 42 | Motorcycles, with side cars | | | | 2 | | | 9 | 11 | 4 | | 15 | |
| 43 | Trailer, radio | | | | 1 | | | | 1 | | | 1 | |
| 44 | Trucks, cargo, 3/4 ton | | | | | 2 | | | 2 | | | 2 | |
| 45 | Trucks, cargo, 1 1/2 - 2 ton | | | | 1 | | | | 1 | | | 1 | |
| 46 | Guns, 37 mm. | | | | | | 3 | | 3 | | | 3 | |
| 47 | Guns, machine | | | | | | | 24 | 24 | | | 24 | |
| 48 | Mortars, 3 inch | | | | | | 6 | | 6 | | | 6 | |
| 49 | Pistols | | | 9 | 87 | 78 | 109 | 556 | 1249 | | | 1249 | |
| 50 | Rifles | | | | 65 | 202 | | 1449 | 1717 | | | 1717 | 6 |
| 51 | Rifles, automatic | | | | | | | 162 | 162 | | | 162 | |
| 52 | Rifles, with grenade dischargers | | | | | | | 162 | 162 | | | 162 | |

REMARKS.

(h) Mounted on horse.
 (c) Additional strength as in column 13 will be added to each regiment not part of a division. Comprises intrenching equipment (including 3 wagons, R. & B., 4 mule, and 6 wagoners.) In division this equipment is part of Engineer Regiment.
 (d) Dental Service.
 (e) 1 Cook and 4 (1 v) Medical Dept. Technicians.

(f) Assistant Cook.
 (t) Medical Dept. Technicians.
 (v) Veterinary Service.
 (g) 1 Mechanic; 2 wagoners; and 13 (incl. 1v and 2d) Medical Dept. Technicians.
 (x) Not authorized for War Strength units organized in time of peace.

VI.—HEADQUARTERS AND HEADQUARTERS COMPANY, INFANTRY REGIMENT.

| 1 | Units | Specialist Rating (Class) | Symbol Number | Regimental Headquarters | Headquarters Company | | | | | | | | | | | | Total Company | Attached, Chaplains | Aggregate |
|----|-------------------------------|---------------------------|---------------|-------------------------|----------------------|----------------------|-----------------|-----------------------|----------------|--------------------------|--------------|-----------------------|----------------|-----|-----|---------------|-----------------|---------------------|-----------|
| | | | | | Company Headquarters | Intelligence Platoon | Pioneer Platoon | Communication Platoon | | | | | | | | Total Platoon | | | |
| | | | | | | | | Platoon Headquarters | Message Center | Courier & Runner Section | Wire Section | Radio & Panel Section | Visual Section | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| 2 | Colonel | | | 1h | | | | | | | | | | | | | | | |
| 3 | Lieutenant Colonel | | | 1hb | | | | | | | | | | | | | | | |
| 4 | Major | | | 1ho | | | | | | | | | | | | | | | |
| 5 | Captains, incl. | | | 4 | 1 | | | | | | | | | | 1 | | | | |
| 6 | Regimental Staff | | | (4nd) | | | | | | | | | | | | | | | |
| 7 | Company Commander | | | | (1h) | | | | | | | | | | | | | | |
| 8 | First Lieutenants, incl. | | | 1 | | | | 1 | | | | | | 1 | 1 | | | | |
| 9 | Munitions Officer | | | (1h) | | | | | | | | | | | | | | | |
| 10 | Platoon Commander | | | | | | | (1h) | | | | | | | | | | | |
| 11 | Second Lieutenants, incl. | | | 1hr | | | | 1 | | | | | | | | | | | |
| 12 | Total Commissioned | | | 9(1h) | 1 | | | 1 | 1 | | | | | 1 | 3 | 2 | 2(1h)
14(1h) | | |
| 13 | Master Sergeants, incl. | | | 1 | | | | | | | | | | | 1 | | 1 | | |
| 14 | Sergeant Major | | | (1hr) | | | | | | | | | | | | | | | |
| 15 | Technical & First Sergeants | | | 3 | | | | 1h | | | | | | 1 | 2 | | 2 | | |
| 16 | Sergeants, incl. | | | 1 | 3 | 1 | | | 1 | 1 | 1 | 1 | 1 | 5 | 12 | | 18 | | |
| 17 | Asst to Munition Officer | | | (1) | | | | | | | | | | | | | | | |
| 18 | Interpreter | | | (1) | (1) | | | | | | | | | | | | | | |
| 19 | Mess | | | (1) | | | | | | | | | | | | | | | |
| 20 | Section Chiefs | | | (2g) | (1) | | | (1) | (1h) | (1) | (1) | (1) | (1) | | | | | | |
| 21 | Supply | | | (1) | | | | | | | | | | | | | | | |
| 22 | Corporals, incl. | | | 1 | 2 | 4 | | | 1 | 1 | 2 | 2 | 1 | 7 | 14 | | 14 | | |
| 23 | Asst Section Chief | | | | | | | | (1) | | | | | | | | | | |
| 24 | Company Clerk | | | (1) | | | | | | | | | | | | | | | |
| 25 | Construction | | | | | | | | | | | | | | | | | | |
| 26 | Operators | | | | | | | | | | (1) | | | | | | | | |
| 27 | Miscellaneous | | | | | (21) | (4) | | (1h) | | | | | | | | | | |
| 28 | Privs. 1st Cl. & Privs. incl. | | | 11 | 13 | 28 | 2 | 4 | 11 | 11 | 6 | 6 | 40 | 92a | | | 92 | | |
| 29 | Barber | | | (1) | | | | | | | | | | | | | | | |
| 30 | Carpenters | 4th | | | | (4) | | | | | | | | | | | | | |
| 31 | Chauffeurs | 5th | | (2f) | | | | | | | | | | | | | | | |
| 32 | Cobbler | | | (1) | | | | | | | | | | | | | | | |
| 33 | Cooks (First) | 4th | | (3d) | | | | | | | | | | | | | | | |
| 34 | Cooks (Asst) | 5th | | (2) | | | | | | | | | | | | | | | |
| 35 | Line Guards | | | | | | | | | | (8) | | | | | | | | |
| 36 | Mechanics | 4th | | | | (4) | | | | | | | | | | | | | |
| 37 | Mechanics | 5th | | | | (2k) | | | | | | | | | | | | | |
| 38 | Messengers | | | | (1n) | | | | (4p) | | | | | | | | | | |
| 39 | Messengers, motorcycle | 5th | | | | | | | (2) | | | | | | | | | | |
| 40 | Observers | 5th | | (21) | | | | | | | | | | | | | | | |
| 41 | Operators | 5th | | | | | | | | | (2) | (3) | (3) | | | | | | |
| 42 | Tailor | | | (1) | | | | | | | | | | | | | | | |
| 43 | Miscellaneous | | | (1g) | (101) | (20) | | (4r) | | (1) | (3) | (3) | | | | | | | |
| 44 | Total Enlisted | | | 17 | 18 | 33 | 3 | 6 | 13 | 14 | 9 | 8 | 53 | 121 | | | 121 | | |
| 45 | AGGREGATE | | | 9 | 18 | 18 | 34 | 4 | 6 | 13 | 14 | 9 | 8 | 54 | 124 | 2 | 135 | | |
| 46 | Horses, riding | | | 9 | 2 | | | 2 | | 9 | | | | 11 | 13 | 2 | 24 | | |
| 47 | Total Animals | | | 9 | 2 | | | 2 | | 9 | | | | 11 | 13 | 2 | 24 | | |
| 48 | Bicycles | | | | | 1 | | | | 2 | | | | 2 | 3 | | 3 | | |
| 49 | Cars, motor, 5 passenger | | | 1f | | | | | | | | | | | 1 | | 1 | | |
| 50 | Motorcycles, with side cars | | | | | | | | | 2 | | | | 2 | 2 | | 2 | | |
| 51 | Trailer, radio | | | | | | | | | | | 1 | | 1 | 1 | | 1 | | |
| 52 | Trucks, cargo, 1½ or 2 ton | | | | | | | | | | | 1 | | 1 | 1 | | 1 | | |
| 53 | Pistols | | | 9 | 13 | 18 | 2 | 4 | 6 | 13 | 14 | 9 | 8 | 54 | 67 | | 96 | | |
| 54 | Rifles | | | | 5 | 14 | 32 | | | 7 | 8 | | | 15 | 66 | | 66 | | |

REMARKS.

(h) Mounted on horse.

(a) Includes:

40 Privates 1st Cl.

52 Privates.

Summary of Specialist Ratings:

Fourth Class, 11.

Fifth Class, 4.

Sixth Class, 14.

(b) Second in Command and Executive Officer.

(c) Machine Gun Officer.

(d) Reg't Staff consists of:

Adjutant.

Intelligence Officer.

Plans and Train'g Officer.

Supply Officer.

(f) For duty with Reg't Hqrs.

(g) 1 for Office Force (also topographical draftsman and clerk); 1 for field force.

(i) Field Force.

(j) 1 for Hqrs. Officers' Mess.

(k) Radio Mechanics and Electricians.

(n) For Office Force; Bicyclist.

(p) 7 mounted on horse, 2 bicyclists.

(q) For Hqrs. Officers' Mess.

(r) Includes clerks, pigeon men and orderlies.

(x) Ass't to Machine Gun Officer. Not authorized for War Strength Reg'ts organized in time of peace.

VII.—SERVICE COMPANY, INFANTRY REGIMENT.

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----|---------------------------------|---------------------------|---------------|----------------------|----------------------|----------------|--------------|---------------|------------------------|-----------------------|-----------------------|-----------------------|----------------------|--------------------------|---------------|---------------|----|
| 1 | Units | Specialist Rating (Class) | Symbol Number | Company Headquarters | Headquarters Platoon | | | | Transportation Platoon | | | | | | | | |
| | | | | | Staff Section | Supply Section | Band Section | Total Platoon | Platoon Headquarters | 1st Battalion Section | 2nd Battalion Section | 3rd Battalion Section | Headquarters Section | Howitzer Company Section | Total Platoon | Total Company | |
| 2 | Captain | | | 1h | | | | | | | | | | | | | 1 |
| 3 | First Lieutenants | | | | 1b | 2hx | | 3x | 1h | | | | | | | 1 | 4x |
| 4 | Second Lieutenants | | | | | 1h | | 1 | | | | | | | | | 1 |
| 5 | Total Commissioned | | | 1 | 1 | 2x | | 4x | 1 | | | | | | | 1 | 6x |
| 6 | Warrant Officers | | | | | | 1 | 1 | | | | | | | | | 1 |
| 7 | Master Sergeants, incl. | | | | 1b | 2h | | 3 | | | | | | | | | 3 |
| 8 | First Sergeant | | | 1 | | | | | | | | | | | | | 1 |
| 9 | Staff Sergeants, incl. | | | | 3 | | 1 | 4 | 1 | | | | | | | 1 | 5 |
| 10 | Band | | | | | | (1) | | | | | | | | | | |
| 11 | Color | | | | (2) | | | | | | | | | | | | |
| 12 | Wagonmaster | | | | | | | | (1m) | | | | | | | | |
| 13 | Miscellaneous | | | | (1b) | | | | | | | | | | | | |
| 14 | Sergeants, incl. | | | 3 | 2 | 4 | 3 | 9 | 2 | 1 | 1 | 1 | | | 1 | 6 | 18 |
| 15 | Band (incl. Bugler Sergt) | | | | | | | (3) | | | | | | | | | |
| 16 | Mail | | | | (1) | | | | | | | | | | | | |
| 17 | Mess | | | | (1) | | | | | | | | | | | | |
| 18 | Stable | | | | | | | | (1m) | | | | | | | | |
| 19 | Supply | | | | (1) | (4h) | | | | | | | | | | | |
| 20 | Wagonmasters (Ass't) | | | | (1) | | | | (1m) | (1m) | (1m) | (1m) | | | (1m) | | |
| 21 | Miscellaneous | | | | (1) | (1b) | | | | | | | | | | | |
| 22 | Corporals, incl. | | | 1 | | 1 | 4 | 5 | 2 | | | | | | | 2 | 8 |
| 23 | Band | | | | | | (4) | | | | | | | | | | |
| 24 | Company Clerk | | | | (1) | | | | | | | | | | | | |
| 25 | Miscellaneous | | | | | (1) | | | (2m) | | | | | | | | |
| 26 | Pvts, 1st Cl. & Pvts. incl. | | | 10 | 10 | 10 | 40 | 60 | 26 | 40 | 40 | 40 | 8 | 14 | 168 | 238 | 24 |
| 27 | Barber | | | (1) | | | | | | | | | | | | | |
| 28 | Clerks | 3rd | | | (1) | (1) | | | | | | | | | | | |
| 29 | Clerks | 4th | | | (1) | (1) | | | | | | | | | | | |
| 30 | Clerks | 5th | | | (1) | (1) | | | | | | | | | | | |
| 31 | Cobbler | | | (1) | | | | | | | | | | | | | |
| 32 | Cooks (First) | 4th | | (2) | | | | | | | | | | | | | |
| 33 | Cooks (Ass't) | 5th | | (3) | | | | | | | | | | | | | |
| 34 | Horseshoers | 4th | | | | | | | (5) | | | | | | | | |
| 35 | Mechanics | 5th | | (2) | | | | | | | | | | | | | |
| 36 | Musicians | 2nd | | | | | (4) | | | | | | | | | | |
| 37 | Musicians | 3rd | | | | | (6) | | | | | | | | | | |
| 38 | Musicians | 4th | | | | | (6) | | | | | | | | | | |
| 39 | Musicians | 5th | | | | | (15) | | | | | | | | | | |
| 40 | Musicians | | | | | | (9) | | | | | | | | | | |
| 41 | Operators, Shoe Repair Mch. | 5th | | | (3) | | | | | | | | | | | | |
| 42 | Saddlers | 5th | | | | | | | (4) | | | | | | | | |
| 43 | Storekeepers | | | | | (3) | | | | | | | | | | | |
| 44 | Tailor | | | (1) | | | | | | | | | | | | | |
| 45 | Wagoners | 5th | | | | | | | | | | | | | | | |
| 46 | Wagoners | | | | | | | | (15) | (40) | (40) | (40) | (8) | (14) | (64) | | |
| 47 | Wheelwright | 4th | | | | (1) | | | | | | | | | (94) | | |
| 48 | Miscellaneous | | | | (7e) | | | | | | | | | | | | |
| 49 | Total Enlisted | | | 15 | 16 | 17 | 48 | 81 | 31 | 41 | 41 | 41 | 8 | 15 | 177 | 273 | 24 |
| 50 | AGGREGATE | | | 16 | 17 | 20 | 49 | 86 | 32 | 41 | 41 | 41 | 8 | 15 | 178 | 280 | |
| 51 | Horses, riding | | | 2 | | 9 | | 9 | 2 | | | | | | | 2 | 13 |
| 52 | Mules, draft | | | | | | | | 40x | 80 | 80 | 80 | 16 | 36 | 332 | 332 | |
| 53 | Mules, riding | | | | | | | | 5 | 1 | 1 | 1 | | 1 | 9 | 9 | |
| 54 | Total Animals | | | 2 | | 9 | | 9 | 47 | 81 | 81 | 81 | 16 | 37 | 343 | 354 | |
| 55 | Carts, ration, 2 mule | | | | | | | | 1 | 5 | 5 | 5 | 1 | 1 | 18 | 18 | |
| 56 | Carts, water, 2 mule | | | | | | | | 1 | 5 | 5 | 5 | 1 | 1 | 18 | 18 | |
| 57 | Kitchens, rolling, 4 mule | | | | | | | | 1 | 5 | 5 | 5 | 1 | 1 | 18 | 18 | |
| 58 | Wagons, combat, 4 mule | | | | | | | | | 5x | 5x | 5x | | | 4 | 19 | 19 |
| 59 | Wagons, escort, (R & B), 4 mule | | | | | | | | 61 | 5 | 5 | 5 | 2x | 3n | 254 | 264 | |
| 60 | Trucks, Cargo, 3/4 ton | | | | | | | | 2k | | | | | | 2 | 2 | |
| 61 | Pistols | | | 9 | 3 | 9 | 49 | 61 | 4 | 1 | 1 | 1 | | 1 | 8 | 78 | |
| 62 | Rifles | | | 7 | 14 | 11 | | 25 | 28 | 40 | 40 | 40 | 8 | 14 | 170 | 202 | |

REMARKS.

(h) Mounted on horse.

(m) Mounted on mule.

(a) Includes:

67 Privates 1st Cl.

171 Privates.

Summary of Specialist Ratings:

Second Class, 4.

Third Class, 8.

Fourth Class, 17.

Fifth Class, 27.

Sixth Class, 66d.

(b) Ass't to Adjutant.

(d) Additional strength for each regiment not part of a division; 6 Wagoners, being 3 Pvts.

1st Cl. and 3 Pvts, 6th Cl. Spec. Rating for three. 3 Wagoners, R. & B., with Bn. intrenching equipment, 12 mules, draft. (In division, this personnel and equipment is part of Engineer Regiment.)

(c) Includes, 1 Chaplain's Ass't, 4 Mail Orderlies.

(f) Includes 8 spare mules.

(g) 1 for each Rifle Co. 2 for each M. G. Co.

(i) Includes 4 forage wagons.

(j) 1 for Headquarters, 1 for Hqrs. Co.

(k) For general utility.

(n) 2 for Mortars in Howitzer Company.

(x) Includes one not authorized for War Strength Regiments organized in time of peace.

VIII.—HOWITZER COMPANY, INFANTRY REGIMENT.

| 1 | 2 | 3 | 4 | One Platoon | | | | 9 |
|---------------------------------|---------------------------|---------------|----------------------|----------------------|-----------------------|------------------------|---------------|---|
| | | | | 5 | 6 | 7 | 8 | |
| Units | Specialist Rating (Class) | Symbol Number | Company Headquarters | Platoon Headquarters | 1 one pounder Section | 1 Light Mortar Section | Total Platoon | Total Company (3 Platoons and Company Headquarters) |
| 2 Captain | | | 1h | | | | | 1 |
| 3 First Lieutenants | | | | 1h | | | 1h | 2 |
| 4 Second Lieutenants | | | | | | | | 1 |
| 5 Total Commissioned | | | 1 | 1 | | | 1 | 4 |
| 6 First Sergeant | | | 1h | | | | | 1 |
| 7 Sergeants, incl. | | | 2 | 1 | | | 1 | 5 |
| 8 Mess | | | (1) | | | | | |
| 9 Platoon Sgt. and Range Finder | | | | (1h) | | | | |
| 10 Supply | | | (1) | | | | | |
| 11 Corporals, incl. | | | 1 | 2 | 1 | 1 | 4 | 13 |
| 12 Company Clerk | | | (1) | | | | | |
| 13 Transport | | | | (1m) | | | | |
| 14 Miscellaneous | | | (1) | (1) | (1) | (1) | | |
| 15 Pvts. 1st Cl..& Pvts. incl. | | | 17 | 4 | 9 | 10 | 23 | 86a |
| 16 Barber | | | (1) | | | | | |
| 17 Buglers | | | (2) | | | | | |
| 18 Chauffeurs | 6th | | | (1) | | | | (3) |
| 19 Cobbler | | | (1) | | | | | |
| 20 Cooks (First) | 4th | | (1) | | | | | |
| 21 Cooks (Ass't) | 5th | | (2) | | | | | |
| 22 Gunners | 6th | | | | | | | (2) |
| 23 Gunners | | | | | (1) | (1) | | (4) |
| 24 Horseshoers | 4th | | (1) | | | | | |
| 25 Mechanics | 6th | | (2) | | | | | |
| 26 Runners and Agents | | | (6) | (3) | | | | |
| 27 Tailor | | | (1) | | | | | |
| 28 Miscellaneous | | | | | (8) | (9) | | |
| 29 Total Enlisted | | | 21 | 7 | 10 | 11 | 28 | 105 |
| 30 AGGREGATE | | | 22 | 8 | 10 | 11 | 29 | 109 |
| 31 Horses, riding | | | 8 | 2 | | | 2 | 8 |
| 32 Mules, draft | | | | | 2 | 2 | 4 | 12 |
| 33 Mules, riding | | | | 1 | | | 1 | 3 |
| 34 Total Animals | | | 2 | 3 | 2 | 2 | 7 | 23 |
| 35 Carts, ammunition, 37 mm. | | | | | 1 | 1 | 2 | 6 |
| 36 Carts, mortar, 1-mule | | | | | | 1 | 1 | 3 |
| 37 Bicycles | | | 4 | | | | | 4 |
| 38 Guns, 37 mm. | | | | | 1 | | 1 | 3 |
| 39 Mortars, 3 inch | | | (35) | | | 1 | 1 | 6 |
| 40 Pistols | | | 22 | 8 | 10 | 11 | 29 | 109 |

REMARKS.

(h) Mounted on horse.

(m) Mounted on mule.

(a) Includes:

26 Privates 1st Class.

60 Privates.

Summary of Specialist Ratings:

Fourth Class, 2.

Fifth Class, 2.

Sixth Class, 7.

(b) Reserve.

NOTE: The armament and hence also the details of organization of the howitzer Company are provisional, pending adoption and issue of the infantry howitzer.

IX.—INFANTRY BATTALION (Consolidated Table).

| 1 | Units | 2
Specialist Rating (Class) | 3
Symbol Number | 4
Headquarters | 5
Headquarters Company | 6
Three Rifle Companies | 7
One Machine Gun Company | 8
Total Battalion |
|----|----------------------------------|--------------------------------|--------------------|-------------------|---------------------------|----------------------------|------------------------------|----------------------|
| 2 | Lieutenant Colonel | | | 1 | | | | 1 |
| 3 | Major | | | 1x | | | | 1x |
| 4 | Captains | | | | | 3 | 1 | 4 |
| 5 | First Lieutenants | | | 4 | 1 | 6(3x) | 3(1x) | 14(4x) |
| 6 | Second Lieutenants | | | | | 6 | 1 | 7 |
| 7 | Total Commissioned | | | 6(1x) | 1 | 15(3x) | 5(1x) | 27(5x) |
| 8 | Technical or First Sergeants | | | | | 3 | 1 | 4 |
| 9 | Staff Sergeants | | | | 1 | | | 1 |
| 10 | Sergeants | | | | 7 | 36 | 11 | 54 |
| 11 | Corporals | | | | 11 | 78 | 14 | 103 |
| 12 | Privates 1st Class | | | | 24 | 159 | 35 | 218 |
| 13 | Privates) incl. | | | | 33 | 324 | 80 | 437 |
| 14 | Miscellaneous | 1st | | | | | | |
| 15 | Miscellaneous | 2nd | | | | | | |
| 16 | Miscellaneous | 3rd | | | | | | |
| 17 | Miscellaneous | 4th | | | (3) | (6) | (2) | (11) |
| 18 | Miscellaneous | 5th | | | (2) | (6) | (3) | (11) |
| 19 | Miscellaneous | 6th | | | (15) | (24) | (6) | (45) |
| 20 | Miscellaneous | | | | (37) | (447) | (104) | (588) |
| 21 | Total Enlisted | | | | 76 | 600 | 141 | 817 |
| 22 | AGGREGATE | | | 6 | 77 | 615 | 146 | 844 |
| 23 | Horses, riding | | | 6 | 9 | | 8 | 23 |
| 24 | Mules, draft | | | | | | 16 | 16 |
| 25 | Mules, riding | | | | | | 1 | 1 |
| 26 | Total Animals | | | 6 | 9 | | 25 | 40 |
| 27 | Carts, ammunition, M.G. | | | | | | 8 | 8 |
| 28 | Carts, M.G. gun | | | | | | 8 | 8 |
| 29 | Bicycles | | | | 3 | | 3 | 6 |
| 30 | Motorcycles, with side cars | | | | 2 | | 1 | 3 |
| 31 | Guns, machine | | | | | | 8 | 8 |
| 32 | Pistols | | | 6 | 71 | 99 | 146 | 322 |
| 33 | Rifles | | | | 39 | 444 | | 483 |
| 34 | Rifles, automatic | | | | | 54 | | 54 |
| 35 | Rifles, with grenade dischargers | | | | | 54 | | 54 |

REMARKS.

(x) Not authorized for War Strength units organized in time of peace.

X.—HEADQUARTERS AND HEADQUARTERS COMPANY, INFANTRY BATTALION.

| 1 | Units | Specialist Rating (Class) | 2 | 3 | 4 | 5 | 6 | Headquarters Company | | | | | | | | | | 14 | 15 | | | |
|----|------------------------------|---------------------------|---|---|-------|------|-----|----------------------|--------------|----------------------|----------------------|----------------------|----------------|-----------------|--------------|-----------------------|----------------|----|----|---------------|---------------|-----------|
| | | | | | | | | Symbol Number | Headquarters | Company Headquarters | Intelligence Section | Platoon Headquarters | Message Center | Courier Section | Wire Section | Radio & Panel Section | Visual Section | | | Total Platoon | Total Company | Aggregate |
| | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Lieutenant Colonel | | | | 1h | | | | | | | | | | | | 1 | | | | | |
| 3 | Major | | | | 1hx | | | | | | | | | | | | 1x | | | | | |
| 4 | First Lieutenants, incl. | | | | 4 | (1d) | | 1h | | | | | | 1 | 1 | | 5 | | | | | |
| 5 | Battalion Staff | | | | (4hc) | | | | | | | | | | | | | | | | | |
| 6 | Total Commissioned | | | | 5(1x) | | | 1 | | | | | | 1 | 1 | | 7(1x) | | | | | |
| 7 | Staff Sergeants, incl. | | | | 1 | | | | | | | | | | | 1 | 1 | | | | | |
| 8 | Sergeant Major | | | | (1he) | | | | | | | | | | | | | | | | | |
| 9 | Sergeants, incl. | | | | 2 | 2 | 1 | 1 | | 1 | | | | 3 | 7 | | 7 | | | | | |
| 10 | Acting First Sergeant | | | | (1) | | | | | | | | | | | | | | | | | |
| 11 | Chief Observer | | | | | (1) | | | | | | | | | | | | | | | | |
| 12 | Chief Scout | | | | | (1) | | | | | | | | | | | | | | | | |
| 13 | Mess and Supply | | | | | (1) | | | | | | | | | | | | | | | | |
| 14 | Signal Electrician | | | | | | | (1h) | | | | | | | | | | | | | | |
| 15 | Miscellaneous | | | | | | | | | | | | | | | | | | | | | |
| 16 | Corporals, incl. | | | | | | 5 | | 1 | 1 | 2 | 1 | 1 | 6 | 11 | | 11 | | | | | |
| 17 | Construction | | | | | | | | | | | | | | | | | | | | | |
| 18 | Observers | | | | | (2) | | | | | (1) | | | | | | | | | | | |
| 19 | Operators | | | | | | | | | | | (1) | (1) | | | | | | | | | |
| 20 | Scouts | | | | | (3) | | | | | | | | | | | | | | | | |
| 21 | Miscellaneous | | | | | | | | (1) | (1h) | | | | | | | | | | | | |
| 22 | Pvts. 1st Cl. & Pvts., incl. | | | | | 10 | 20 | | 3 | 10 | 5 | 5 | 4 | 27 | 57a | 57 | | | | | | |
| 23 | Barber | | | | | (1) | | | | | | | | | | | | | | | | |
| 24 | Chauffeur | 5th | | | | (1e) | | | | | | | | | | | | | | | | |
| 25 | Clerk | 4th | | | | (1e) | | | | | | | | | | | | | | | | |
| 26 | Cobbler | | | | | (1) | | | | | | | | | | | | | | | | |
| 27 | Cooks (First) | 4th | | | | (2f) | | | | | | | | | | | | | | | | |
| 28 | Cooks (Ass't) | 5th | | | | (1) | | | | | | | | | | | | | | | | |
| 29 | Line Guards | | | | | | | | | | | (3) | | | | | | | | | | |
| 30 | Messengers | | | | | | | | | | (5g) | | | | | | | | | | | |
| 31 | Motorcyclists | 5th | | | | | | | | | (2) | | | | | | | | | | | |
| 32 | Observers | 5th | | | | | (3) | | | | | | | | | | | | | | | |
| 33 | Observers | | | | | | (5) | | | | | | | | | | | | | | | |
| 34 | Operators | 5th | | | | | | | | | | (1) | (3) | (2) | | | | | | | | |
| 35 | Scouts | 5th | | | | | (4) | | | | | | | | | | | | | | | |
| 36 | Scouts | | | | | | (8) | | | | | | | | | | | | | | | |
| 37 | Tailor | | | | | (1) | | | | | | | | | | | | | | | | |
| 38 | Miscellaneous | | | | | (2) | | | | | (31) | (1) | (2) | (2) | | | | | | | | |
| 39 | Total Enlisted | | | | | 13 | 27 | 1 | 5 | 11 | 8 | 6 | 5 | 36 | 76 | 76 | | | | | | |
| 40 | AGGREGATE | | | | | 6 | 13 | 27 | 2 | 5 | 11 | 8 | 6 | 5 | 37 | 77 | 83 | | | | | |
| 41 | Horses, riding | | | | | 6 | 1 | | 2 | | 6 | | | | 8 | 9 | 15 | | | | | |
| 42 | Total Animals | | | | | 6 | 1 | | 2 | | 6 | | | | 8 | 9 | 15 | | | | | |
| 43 | Bicycles | | | | | | | | | | 3 | | | | 3 | 5 | 3 | | | | | |
| 44 | Motorcycles, with side cars | | | | | | | | | | 2 | | | | 2 | 2 | 2 | | | | | |
| 45 | Pistols | | | | | 6 | 7 | 27 | 2 | 5 | 11 | 8 | 5 | 5 | 37 | 71 | 77 | | | | | |
| 46 | Rifles | | | | | | 6 | 25 | | | 5 | 3 | | | 8 | 39 | 39 | | | | | |

REMARKS.

(h) Mounted on horse.

(a) Includes:

24 Privates 1st Class.

33 Privates.

Summary of Specialist Ratings:

Fourth Class, 3.

Fifth Class, 2.

Sixth Class, 15.

(c) Battalion Staff consists of:

Adjutant.

Intelligence Officer.

Plans and Training Officer.

Supply Officer.

(d) Staff Officer commands Hdqrs. Co. Not included in totals.

(e) For duty with Battalion Hdqrs.

(f) 1 for Officers' Mess. In War only.

(g) 5 mounted on horse. 3 Bicyclists.

(i) Includes necessary clerks, pigeon men and orderlies.

(x) Second in Command and Executive Officer. Not authorized for War Strength Battalions organized in time of peace.

XI.—RIFLE COMPANY, INFANTRY REGIMENT.

| 1 | Units | 2
Specialist Rating (Class) | 3
Symbol Number | 4
Company Headquarters | One Platoon | | | | 9
Total Company (3 Platoons and Company Headquarters) |
|----|------------------------------------|--------------------------------|--------------------|---------------------------|---------------------------|--------------|--|--|--|
| | | | | | 5
Platoon Headquarters | 6
1 Squad | 7
1 Section (3 Squads and Section Headquarters) (d) | 8
Total Platoon (2 Sections and Platoon Headquarters) | |
| 2 | Captain | | | 1 | | | | | 1 |
| 3 | First Lieutenants | | | 1x | | | | | 2(1x) |
| 4 | Second Lieutenants | | | | 1 | | | 1 | 2 |
| 5 | Total Commissioned | | | 2(1x) | 1 | | | 1 | 5(1x) |
| 6 | First Sergeant | | | 1 | | | | | 1 |
| 7 | Sergeants, incl. | | | 3 | 1 | | 1 | 3 | 12 |
| 8 | Mess | | | (1) | | | | | |
| 9 | Platoon Sergeants | | | | (1) | | | | |
| 10 | Section Leaders | | | | | | (1) | | |
| 11 | Signal | | | (1) | | | | | |
| 12 | Supply | | | (1) | | | | | |
| 13 | Corporals, incl. | | | 2 | | 1 | 4 | 8 | 26 |
| 14 | Company Clerk | | | (1) | | | (1) | | |
| 15 | Section Guides | | | | | | | | |
| 16 | Signal | | | (1) | | | | | |
| 17 | Squad Leaders | | | | | (1) | (3) | | |
| 18 | Pvts. 1st Cl. & Pvts., incl. | | | 17 | 4 | 7 | 21 | 46 | 161ac |
| 19 | Barber | | | (1) | | | | | |
| 20 | Buglers | | | (2) | | | | | |
| 21 | Cobbler | | | (1) | | | | | |
| 22 | Cooks (First) | 4th | | (2) | | | | | |
| 23 | Cooks (Ass't) | 5th | | (2) | | | | | |
| 24 | Mechanics | 6th | | (2) | | | | | |
| 25 | Riflemen | | | | | (5) | | | |
| 26 | Riflemen, automatic | 6th | | | | (1) | (1) | (2) | (6) |
| 27 | Riflemen, automatic | | | | | | (2) | (4) | (12) |
| 28 | Riflemen, with grenade dischargers | | | | | (1) | | | |
| 29 | Runners and Agents | | | (6) | (4) | | | | |
| 30 | Tailor | | | (1) | | | | | |
| 31 | Total Enlisted | | | 23 | 5 | 8 | 26 | 57 | 200c |
| 32 | AGGREGATE | | | 25 | 6 | 8 | 26d | 58 | 205 |
| 33 | Pistols | | | 9 | 2 | 1 | 3 | 8 | 33 |
| 34 | Rifles | | | 16 | 4 | 6 | 20 | 44 | 148 |
| 35 | Rifles, automatic | | | | | 1 | 3 | 6 | 18 |
| 36 | Rifles, with grenade discharger | | | | | 1 | 3 | 6 | 18 |

REMARKS.

(a) Includes:
 53 Privates 1st Class.
 108 Privates.
 Summary of Specialist Ratings:
 Fourth Class, 2.
 Fifth Class, 2.
 Sixth Class, 8.

(x) Second in Command. Not authorized for War Strength Companies organized in time of peace.

(c) Includes 6 extra privates.

(d) Includes Section Headquarters (1 Sergeant and 1 Corporal).

XII.—MACHINE-GUN COMPANY, INFANTRY REGIMENT.

| 1 | Units | Specialist Rating (Class) | Symbol Number | Company Headquarters | Company Train | One Platoon | | | | Total Company (2 Platoons, Company Hq. & Company Train) |
|----|-----------------------------|---------------------------|---------------|----------------------|---------------|----------------------|-------------------------|---|---|---|
| | | | | | | Platoon Headquarters | 1 Squad (1 Machine Gun) | 1 Section (2 Squads and Section Headquarters) (b) | Total Platoon (2 Sections and Platoon Headquarters) | |
| 2 | Captain | | | 1h | | | | | | 1 |
| 3 | First Lieutenants | | | 1hx | | 1 | | | 1 | 3(1x) |
| 4 | Second Lieutenants | | | 1hc | | | | | | 1 |
| 5 | Total Commissioned | | | 3(1x) | | 1 | | | 1 | 5(1x) |
| 6 | First Sergeant | | | 1h | | | | | | 1 |
| 7 | Sergeants, incl. | | | 4 | 1 | 1 | | 1 | 3 | 11 |
| 8 | Less | | | (1) | | | | | | |
| 9 | Platoon Sergeants | | | | | (1) | | | | |
| 10 | Reconnaissance | | | (1) | | | | | | |
| 11 | Section Leaders | | | | | | | (1) | | |
| 12 | Signal | | | (1) | | | | | | |
| 13 | Stable | | | | (1m) | | | | | |
| 14 | Supply | | | (1) | | | | | | |
| 15 | Corporals, incl. | | | 2 | | 2 | 1 | 2 | 6 | 14 |
| 16 | Agents | | | | | (1) | | | | |
| 17 | Company Clerk | | | (1) | | | | | | |
| 18 | Signal | | | (1) | | | | | | |
| 19 | Squad Leaders | | | | | | (1) | | | |
| 20 | Transport | | | | | (1) | | | | |
| 21 | Pvts. 1st Cl. & Pvts. incl. | | | 17 | 4 | 7 | 10 | 20 | 47 | 115a |
| 22 | Barber | | | (1) | | | | | | |
| 23 | Buglers | | | (2h) | | | | | | |
| 24 | Cobbler | | | (1) | | | | | | |
| 25 | Cooks (First) | 4th | | (1) | | | | | | |
| 26 | Cooks (Ass't) | 5th | | (2) | | | | | | |
| 27 | Gunners | 6th | | | | | (1) | (2) | (4) | (3) |
| 28 | Gunners | | | | | | | | | (5) |
| 29 | Horseshoer | 4th | | | (1) | | | | | |
| 30 | Mechanics | 5th | | (2) | | | | | | |
| 31 | Motorcyclist | 6th | | (1) | | | | | | |
| 32 | Saddler | 5th | | | (1) | | | | | |
| 33 | Tailor | | | (1) | | | | | | |
| 34 | Miscellaneous | | | (7d) | (1e) | (7d) | (9f) | | | |
| 35 | Total Enlisted | | | 24 | 5 | 10 | 11 | 25b | 56 | 141 |
| 36 | AGGREGATE | | | 27 | 5 | 11 | 11 | 23 | 57 | 146 |
| 37 | Horses, riding | | | 6 | | 1 | | | 1 | 8 |
| 38 | Mules, draft | | | | | | 2 | 4 | 8 | 16 |
| 39 | Mules, riding | | | | 1 | | | | | 1 |
| 40 | Total Animals | | | 6 | 1 | 1 | 2 | 4 | 9 | 25 |
| 41 | Carts, ammunition, M.G. | | | | | | 1 | 2 | 4 | 8 |
| 42 | Carts, M.G. gun | | | | | | 2 | 2 | 4 | 8 |
| 43 | Bicycles | | | 1 | | 1 | | | 1 | 3 |
| 44 | Motorcycles, with side cars | | | | 1 | | | | | 1 |
| 45 | Guns, machine | | | | | | 1 | 2 | 4 | 8 |
| 46 | Pistols | | | 27 | 5 | 11 | 11 | 23 | 57 | 146 |

REMARKS.

(h) Mounted on horse.

(m) Mounted on mule.

(a) Includes:

35 Privates 1st Class.

80 Privates.

Summary of Specialist Ratings:

4th Class, 2.

5th Class, 3.

6th Class, 6.

(b) Section Headquarters includes 1 sergeant.

(c) Reconnaissance Officer.

(d) Signalmen, runners, agents and orderlies, 1 bicyclist.

(e) Stable orderly.

(f) Includes 2 drivers for gun and ammunition carts.

(x) Second in Command. Not authorized for War Strength Companies organized in time of peace.

XIII.—TABLE OF ROAD SPACES. (Units of an Infantry Brigade in Yards.)

| INFANTRY | TROOPS | COMBAT TRAIN | COMBAT TRAIN & TROOPS | FIELD TRAIN | TROOPS, COMBAT TRAINS & FIELD TRAINS |
|---|--------|--------------|-----------------------|-------------|--------------------------------------|
| Rifle Platoon | 30 | | | | |
| Pioneer Platoon | 20 | | | | |
| M.G. Section | 45 | | | | |
| M.G. Platoon | 90 | | | | |
| Howitzer Combat Plat. | 40 | | | | |
| Rifle Company | 95 | 55 | 150 | 35 | 185 |
| M.G. Company | 190 | 75 | 265 | 35 | 300 |
| Battalion Hq. Co. | 55 | 35 | 90 | 35 | 125 |
| Battalion | 530 | 325(a) | 855 | 175 | 1030 |
| Regimental Hq. Co. | 70 | 35 | 105 | 35 | 140 |
| Howitzer Company | 125 | 95 | 220 | 35 | 255 |
| Administration Co. | (65) | | | (710) | (775) |
| Regiment | 1785 | 1135(b) | 2920 | 775(c) | 3695 |
| Brigade Hq. Company | 35 | 75(d) | 110 | 35 | 145 |
| Brigade | 3605 | 2350(a) | 5955 | 1585 | 7540 |
| ARTILLERY | | | | | |
| LIGHT THREE INCH | | | | | |
| Battery | 300 | 235 | 535 | 90 | 625 |
| Battalion | 905 | 745 | 1650 | 270 | 1920 |
| Regiment | 1990 | 1665 | 3655 | 700 | 4355 |
| AMBULANCE COMPANY (Horse - 20 ambulances, 3 escort wagons, 1 spring wagon, 1 motorcycle, 1 rolling kitchen, 1 ration cart.) | | | | | |
| One Company | 0 | 462 | 462 | 120 | 582 |

REMARKS.

1. *Troop columns.* Computed as follows: 2 men per yd. (deducting men with trains). 1 horse per yard, and 8 yards per combat cart.

2. *Combat and field trains.* 15 yds. per wagon or cart (1 or 2 mule), 20 yds. per wagon (4 mule).

3. *Artillery and medical troops.* As in former tables of organization.

REFERENCES.

(a) Includes medical wagon (4 horse) and men with combat train—about 50 yds. road space.

(b) Includes medical wagon and men from regimental headquarters and howitzer companies with combat train—about 30 yds. road space.

(c) Includes road space of men from regimental headquarters not on wagons—about 65 yds.

(d) Includes 2 trucks.

(e) Includes road space of men from brigade headquarters with combat train—5 yds.

ADDITIONAL INSTRUCTION

PISTOL MARKSMANSHIP.

INTRODUCTION.

Purpose. The aim of this publication is to present the essentials of pistol training in clearly defined, successive steps that, followed in their proper sequence, will develop a uniform high standard of marksmanship.

Arrangement of text. The text has been arranged in three principal parts.

Part I is devoted to the instruction of the recruit, which will commence as soon as pistols have been issued. It includes simple nomenclature and functioning, precautions to avoid accidents, instruction in the care and cleaning of the piece and a short "Manual of the Pistol."

Part II takes up the development of individual dismounted marksmanship and passes through the successive stages to the final range firing and record practice.

Part III contains miscellaneous reference matter and is followed by an appendix containing a detailed description of the pistol.

Courses. Instruction in pistol marksmanship has been divided into two distinct courses, dismounted and mounted. The dismounted course applies to all units armed with the pistol; the mounted course to cavalry only. The mounted course is omitted in this text.

Qualification. Soldiers are graded according to proficiency exhibited in record practice, dismounted course, as "pistol experts," "pistol sharpshooters," "pistol marksmen," and "unqualified."

Period of instruction. The calendar year is the target year. Commanding officers will so order instruction and practice in marksmanship as to insure not only thorough training, but the maintenance of constant efficiency in pistol firing throughout their commands. These conditions will be obtained by firing the prescribed courses in the regular and supplementary seasons and by means of combat firing or local competitions distributed throughout the year.

Record practice. For any individual, record practice for qualification will be held but once annually. Although record practice is customarily held during the regular or supplementary seasons, local commanding officers may prescribe such practice whenever circumstances make it advisable.

Definitions. For reference purposes, definitions necessary in this course will be found at the end of the subject.

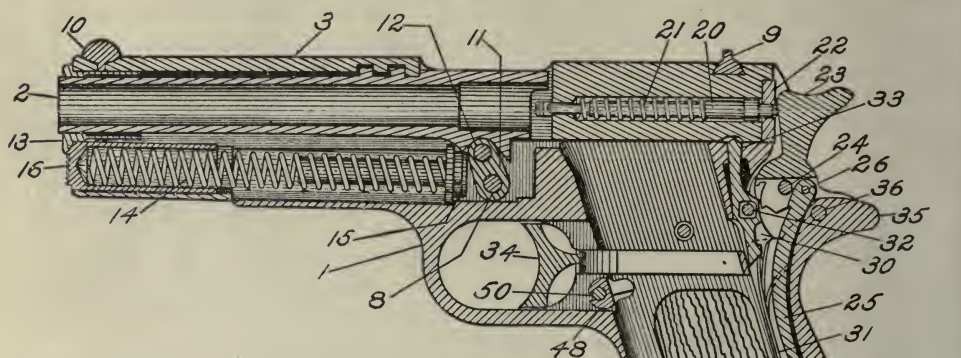
PART I. RECRUIT INSTRUCTION.

Simple Nomenclature and Functioning.

Limitation. The nomenclature and functioning of the pistol as herein presented under "Recruit instruction" is limited to that which is essential to the understanding of ordinary conversation, demonstrations, and preparatory instruction. A more detailed description may be seen in Appendix I, Pistol Marksmanship. This detailed and technical description will be required only under the most unusual circumstances.

Nomenclature. The parts of the pistol which are visible and frequently referred to and those which the soldier handles in partially dismounting his piece for cleaning are as follows: Breech, chamber, lands, grooves, muzzle and the words in italics under the heading "Component Parts."

These parts should be pointed out and their functions explained. There is no necessity of requiring the beginner to memorize the nomenclature at the outset. The names are ordinarily acquired from day to day during recruit instruction.



The Automatic Pistol, Caliber .45.

Component Parts.

- | | | |
|--------------------------|-----------------------------|-------------|
| 1. Receiver. | 22. Firing-pin stop. | |
| 2. Barrel. | 23. Hammer. | |
| 3. Slide. | 24. Hammer pin. | |
| 4. Plunger tube. | 25. Hammer strut. | |
| 5. Slide-stop plunger. | 26. Hammer-strut pin. | |
| 6. Plunger spring. | 27. Mainspring. | |
| 7. Safety-lock plunger. | 28. Mainspring cap. | |
| 8. Slide stop. | 29. Mainspring-cap pin. | |
| 9. Rear sight. | 30. Sear. | |
| 10. Front sight. | 31. Sear spring. | |
| 11. Link. | 32. Sear pin. | |
| 12. Link pin. | 33. Disconnecter. | |
| 13. Barrel bushing. | 34. Trigger. | |
| 14. Recoil spring. | 35. Grip safety. | |
| 15. Recoil-spring guide. | 36. Safety lock. | |
| 16. Plug. | 37. Mainspring housing. | |
| 17. Extractor. | 38. Housing pin. | |
| 18. Ejector. | 39. Housing-pin retainer. | |
| 19. Ejector pin. | 40. Lanyard loop. | |
| 20. Firing pin. | 41. Lanyard-loop pin. | |
| 21. Firing-pin spring. | | |
| | 42. Magazine tube. | |
| | 43. Magazine base. | |
| | 44. Magazine pins (2). | } Magazine. |
| | 45. Magazine loop. | |
| | 46. Magazine spring. | |
| | 47. Magazine follower. | |
| | 48. Magazine catch. | |
| | 49. Magazine-catch spring. | |
| | 50. Magazine-catch lock. | |
| | 51. Stocks, right and left. | |
| | 52. Stock screws (4). | |
| | 53. Screw bushings (4). | |

The automatic pistols, caliber .45. model of 1911, in the military service are marked on the right side, "Model of 1911, U. S. Army"; on the left side, "United States Property." They are also marked with the serial number of the pistol.

Functioning. By means of demonstrations and short talks, the beginner should be given a general idea of the principles upon which the functioning and operation of the pistol are based.

The pistol is recoil operated. The force of recoil drives the slide and barrel backward together. A downward movement of the barrel then unlocks it from the slide, which continues its backward movement alone, opening the breech, cocking the hammer, and compressing the recoil spring. During this backward movement the empty shell is extracted by the extractor and thrown out by the ejector.

The slide having reached its rearmost position, the pressure of the recoil spring drives it forward again. During this return movement it carries a fresh cartridge from the magazine into the chamber. The hammer remains cocked and the pistol is ready to fire.

The trigger pressure must be released after each shot in order that the trigger may reengage. The trigger must be squeezed with the index finger. If the second finger is used on the trigger the index finger will be extended along the side of the receiver where it is apt to press again the projecting end of the slide stop pin, thus causing a jam when the slide recoils.

When the magazine has been emptied the magazine follower pushes up the slide stop, thereby locking the slide in the open position. This serves as an indicator to remind the firer that the last shot has been discharged.

Pressure upon the magazine catch releases the empty magazine from the handle and permits the insertion of a loaded one. In inserting the magazine, care must be exercised to push it home and to see that it engages the magazine catch. In no case should the base of the magazine be struck to force it home. A blow may spring the base or the inturning lips at the top; these changes will produce jams.

To release the slide from the open position it is only necessary to press down the slide stop with the right thumb; the slide will then move forward to its closed position, carrying a cartridge from the previously inserted magazine into the chamber. The pistol is again ready for firing.

Safety Precautions.

Rules for safety. Before ball ammunition is issued the soldier must know the essential rules for safety with the pistol. The following rules will be taught as soon as the recruit is sufficiently familiar with the pistol to understand them. They should be enforced by constant repetition and coaching until their observance becomes the soldier's fixed habit when handling the pistol. When units carrying the pistol are first formed, the officer or non-commissioned officer in charge will cause the men to execute "Inspection pistol."

a. Execute "Unload" every time the pistol is picked up *for any purpose*. Never trust your memory. Consider every pistol as loaded until *YOU* have proven it otherwise.

b. Always unload the pistol if it is to be left where some one else may handle it.

c. Always point the pistol *up* when snapping it after examination. Keep the hammer fully down when the pistol is not loaded.

d. Never place the finger within the trigger guard until you intend to fire or to snap for practice.

e. *Never point the pistol at anyone you do not intend to shoot, nor in a direction where an accidental discharge may do harm.* On the range, do not snap for practice while standing back of the firing line.

f. Before loading the pistol, draw back the slide and look through the bore to see that it is free from obstruction.

g. On the range, do not insert a loaded magazine until the time for firing.

h. Never turn around at the firing point while you hold a loaded pistol in your hand because, by so doing, you may point it at the man firing alongside of you.

i. Do not load the pistol with a cartridge in the chamber until immediate use is anticipated. If there is any delay, lock the pistol and only unlock it while extending the arm to fire. Do not lower the hammer on a loaded cartridge; the pistol is much safer cocked and locked. A man with small hands must be very careful in lowering the hammer with one hand.

j. In reducing a jam, *first remove the magazine.*

k. To remove a cartridge not fired, *fire remove the magazine* and then extract the cartridge from the chamber by drawing back the slide.

l. In campaign the pistol should be carried with a fully loaded magazine in the socket, chamber empty, hammer down. The extra magazines should also be fully loaded.

m. When the pistol is carried in the holster, loaded, cocked, and locked, the butt of the pistol should be rotated away from the body when drawing the pistol in order to avoid displacing the safety lock.

n. Mounted men should never, *under any circumstances*, use both hands on the reins when the pistol is drawn.

o. Safety devices should be frequently tested. A safety device is a danger device if it does not work when expected.

Test of safety lock. Cock the hammer, and then press the safety lock upward into the safe position. Grasp the stock so that the grip safety is depressed and squeeze the trigger three or four times. If the hammer falls, the safety lock is not safe and must be repaired.

Test of grip safety. Cock the hammer and, being careful not to depress the grip safety, squeeze the trigger three or four times. If the hammer falls the grip safety is not safe and must be repaired.

Test of half-cock notch. Draw back the hammer until the sear engages the half-cock notch and squeeze the trigger. If the hammer falls, the hammer or sear must be replaced or repaired. Draw the hammer back nearly to full cock and then let it slip. It should fall only to half cock.

Test of disconnecter. Shove the slide one-quarter inch to the rear; hold slide in that position and squeeze the trigger. Let the slide go forward, *maintaining* the pressure on the trigger. If the hammer falls the disconnecter is worn on top and must be replaced. Pull the slide all the way to the rear and engage the slide stop. Squeeze the trigger, and at the same time release the slide. The hammer should not fall. Release the pressure on the trigger and then squeeze it. The hammer should then fall. The disconnecter prevents the release of the hammer unless the slide and barrel are in the forward position safely interlocked. It also prevents more than one shot following each squeeze of the trigger.

Care of the Pistol.

Cleaning the pistol. Careful, conscientious work is required to keep the automatic pistol in a condition that will insure perfect functioning of the mechanism and continued accuracy of the barrel. It is essential that the entire mechanism be kept cleaned and oiled to avoid jams.

The magazines also require care to prevent rust or an accumulation of sand or dirt in the interior. They are easily dismounted for cleaning and oiling.

To clean the pistol after firing, remove the slide from the receiver and the barrel from the slide; this is usually all the dismounting required, but, after prolonged firing, the extractor and firing pin should also be removed. When the pistol has been exposed to sand or water, it is necessary to dismount it completely for thorough cleaning and oiling. The details of dismounting the pistol may be found in Appendix I.

Care of the bore. Briefly stated, the care of the bore consists in removing fouling resulting from firing and then coating the cleaned surface with a film of rifle oil (sperm oil) or rifle grease (cosmic) or a mixture of both to prevent rust. Fouling is of three kinds: Powder fouling, the product of combustion of the powder; primer fouling, the product of the combustion of the primer; and metal fouling or

copper scraped off the bullet. Powder fouling is simply a light ash and is easily removed and is harmless. Primer fouling consists of a salt known as potassium chloride, which completely covers the bore and which when it absorbs moisture from the air becomes a most active rust agent.

Metal fouling, although not of itself injurious, may cover primer fouling and prevent the action of cleaning agents thereon.

To remove powder and primer fouling. The inner surface of the pistol barrel seems to absorb powder and primer fouling that sweat out after the first cleaning. To prevent rust, it is therefore necessary to clean and oil the barrel four or five times, at first daily and finally with a three or four days' interval between cleanings.

The chamber of the pistol is frequently neglected because it is not readily inspected. Care should be taken to see that it is cleaned as thoroughly as the bore. A roughened chamber decreases the rapidity of fire and not infrequently causes shells to stick.

a. To clean with rifle cleaner or commercial powder solvents. Remove the barrel and wipe the inside with a few dry patches to remove most of the black fouling. Scrub the inside of the barrel thoroughly with a standard commercial solvent applied to patches or on a brass or bristle brush; then wipe dry with clean patches. Also wipe and clean all parts of the pistol that may be covered with fouling. Then cover the inside of the barrel and other parts with plenty of solvent and leave them for 24 hours; repeat four or five times as described above. After the final cleaning be sure to OIL thoroughly with rifle oil or rifle grease or any good mineral or animal oil that will not evaporate quickly.

b. To clean with soda solution. If commercial solvent is not available, a soda solution may be used. To about one pint of hot water add four heaping tablespoonfuls of sal soda or washing soda. Remove the barrel and swab out the bore with this solution. A convenient method is to insert the muzzle of the barrel into a can containing the solution and, with the cleaning rod inserted from the breech, pump the barrel full a few times. Dry with a couple of patches, and then oil. Repeat at same intervals as in subparagraph (a).

The barrel is so short that an emergency cleaning rod is easily made from wood, 8 or 9 inches long, as shown in Plate I.

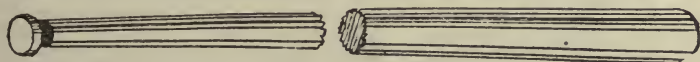


PLATE I.—Emergency Cleaning Rod.

A piece of copper wire or strong twine may be doubled and used as a pull-through.

To oil the barrel. Wipe the cleaning rod dry; select a clean patch and thoroughly saturate it with rifle oil or warmed rifle grease; scrub the bore with the oiled patch and finally draw it smoothly from the muzzle to the breech allowing the cleaning rod to turn with the rifling. The bore should now be smooth and bright so that any subsequent sweating and rust can be easily detected by inspection.

If the protection required is only temporary and the pistol is to be cleaned or fired in a few days, rifle oil may be used. It is easily applied and easily removed but has not sufficient body to present an unbroken covering from more than a few days. If pistols are to be prepared for storage or shipment, a heavier oil, such as rifle grease, must be used and they should first be cleaned with particular care, using the metal fouling solution as described below. Care should be taken, determined by careful inspection on succeeding days, that the cleaning is properly done and that all traces of ammonia solution are removed. The bore is then ready to be coated with rifle grease. At ordinary temperatures rifle grease is not fluid; in order, therefore, to insure that every part of the surface is coated with a film of oil, the rifle grease should be warmed. Apply the rifle grease first with a brush on all metal parts, then, with the breech plugged, fill the barrel to the muzzle, pour out the surplus and allow the barrel to drain. More pistols are ruined by improper

preparation for storage than by any other cause. If the bore is not clean when oiled (if primer fouling is present and rust has started), a half-inch of rifle grease will not check the rust and the barrel will be ruined. If the instructions as given above are carefully followed, pistols may be stored for years without harm.

To remove metal fouling. Metal fouling occurs less frequently in the pistol than in the rifle. If patches of metal fouling are seen as flakes or spots, upon visual inspection of the bore, the standard metal-fouling solution, prepared as hereinafter prescribed, must be used. Plug the bore with a cork at the front end of the chamber or where the rifling begins, slip a 2-inch section of rubber hose over the muzzle and fill with the standard solution to at least one-half inch above the muzzle. Let the solution stand for 30 minutes; pour it out; remove hose and breech plug and swab the barrel out thoroughly with soda solution to neutralize and remove all traces of ammonia. Dry the barrel and then oil. Ordinarily, one application is sufficient but, if all fouling is not removed, as determined by careful visual inspection of the bore and of the wiping patches, repeat as described above.

Standard Metal-Fouling Solution.

Ammonium persulphate: 1 ounce, or 2 medium heaping tablespoonfuls.

Ammonium carbonate: 200 grains, or 1 heaping tablespoonful.

Ammonia (28 per cent): 6 ounces, or three-eighths pint, or 12 tablespoonfuls.

Water: 4 ounces, or one-fourth pint, or 8 tablespoonfuls.

Powder the persulphate and carbonate together, dissolve in the water and add the ammonia; mix thoroughly and allow to stand for one hour before using. The mixture should be kept in a strong bottle, tightly corked. The solution should not be used more than twice; used solution should not be mixed with unused solution, but should be bottled separately. After mixing, the solution should be used within 30 days. An experienced non-commissioned officer should mix the solution and superintend its use in order to prevent injury to the pistol.

This ammonia solution has no appreciable action on steel unless exposed to air but, *if allowed to evaporate on steel, it is rapidly corrosive*. Care should therefore be taken that none of it is spilled on the mechanism and that the barrel is washed out promptly with soda solution.

Emergency cleaning. In an emergency, saliva (which is somewhat alkaline) may be used as primer fouling solvent and any lubricating oil or grease or animal fat (free from salt) may be used as a rust preventive. At the first opportunity after emergency cleaning, the pistol should be thoroughly cleaned and oiled as previously explained.

Important points. a. After firing the pistol, never leave it uncleaned over night. The damage done is then irreparable.

b. Keep the pistol clean and lightly lubricated, but do not let it become gummy with oil.

c. Do not place the pistol on the ground where sand or dirt may enter the bore or mechanism.

d. Do not plug the muzzle of the pistol with a patch or plug; you may forget to remove it before firing, in which case, the discharge may bulge or burst the barrel at the muzzle.

e. The pistol kept in a leather holster may rust, due to moisture absorbed by the leather from the atmosphere, even though the holster may APPEAR to be perfectly dry. If the holster is wet, and the pistol MUST be carried therein, cover the pistol with a thick coat of oil.

f. It is not necessary to remove the stocks in dismantling the pistol.

g. The hammer should not be snapped when the pistol is partially dismantled.

h. Never use a hammer in dismantling or assembling the pistol.

i. Care must be exercised to see that the disconnector is properly assembled to the sear.

j. In assembling, the hammer pin and sear pin are inserted from the left side.

Manual of the Pistol. (Dismounted.)

The manual of the pistol necessarily differs from the Manual of Arms for the rifle, in that the movements cannot be executed in cadence, and because, with a few exceptions, no occasion exists for simultaneous movements. This manual is not intended therefore as a disciplinary drill to be executed in unison with snap and precision, but merely as a short description of the quickest and simplest methods of handling the pistol. Commands (printed in SMALL CAPITALS) are prescribed for only those movements which are occasionally executed simultaneously by a squad or larger unit.

Movements requiring the use of both hands are explained separately for execution dismounted and mounted.

In general, movements begin and end at the position of "Raise, pistol."

To raise pistol. (RAISE, PISTOL.)

Unbutton the flap of the holster with the right hand and grasp the stock, back of the hand outward.

Draw the pistol from the holster; reverse it, muzzle up, the hand holding the stock with the thumb and last three fingers, the forefinger extended outside the trigger guard, the barrel of the pistol to the rear and inclined to the front at an angle of 30°, the hand 6 inches in front of the point of the right shoulder. This is the position of "Raise, pistol."

To cock the pistol. The pistol should be cocked by the thumb of the right hand with the least possible derangement of the grip. The forefinger should be clear of the trigger when cocking the pistol. Some men have difficulty at first in cocking the pistol with the right thumb, but this can be overcome by practice. Jerking the pistol forward while holding the thumb on the hammer will not be permitted.

To lower the hammer. With both hands: 1. Place the right thumb on the hammer while holding the pistol in the right hand. 2. Press down the grip safety with the thumb of the left hand. 3. Squeeze the trigger with the right hand and slowly and carefully lower the hammer with the right thumb.

To withdraw the magazine. Without lowering the right hand, turn the barrel to the right; press the magazine catch with the right thumb and with the left hand remove the magazine. Place it in the belt or otherwise dispose of it; in no case throw it away.

To open the chamber. Withdraw the magazine. Without lowering the right hand, turn the barrel to the left. With thumb and forefinger of the left hand, grasp the slide and pull it downward to the full extent, at the same time forcing the slide stop into its notch with the right thumb.

To close the chamber. With the right thumb press down the slide stop and let the slide go forward. Squeeze the trigger.

To insert a magazine. Without lowering the right hand, turn the barrel to the right and press the magazine catch with the right thumb; grasp a magazine with the first two fingers and thumb of the left hand, draw it from the belt and insert it in the pistol. Press it fully home.

To load the pistol. (LOAD.)

If a loaded magazine is not already in the pistol, insert one.

Without lowering the right hand, turn the barrel to the left. With the left thumb and forefinger grasp the slide and pull it downward to its full extent; release the slide and engage the safety lock.

To unload the pistol. (UNLOAD.)

Withdraw the magazine. Open the chamber. Glance at the chamber to verify that it is empty. Close the chamber. Take the position of "Raise, pistol" and squeeze the trigger. Then insert an empty magazine.

To inspect pistol. (INSPECTION, PISTOL.)

Withdraw the magazine. Open the chamber. Take the position of "Raise, pistol." The withdrawn magazine is held in the left hand at the height of the belt. After the pistol has been inspected, or at the command "RETURN, PISTOL," close

the chamber, take the position of "Raise, pistol," and squeeze the trigger, insert an empty magazine, and execute "Return, pistol."

To return pistol. (RETURN, PISTOL.)

Lower the pistol to the holster, reversing it, muzzle down, back of the hand to the right; raise the flap of the holster with the right thumb; insert the pistol in the holster and thrust it home; button the flap of the holster with the right hand.

To find by command. Commands for firing, when required, are limited to "COMMENCE FIRING" and "CEASE FIRING."

PART II. PISTOL MARKSMANSHIP—DISMOUNTED.

General Scheme.

Pistol firing is a purely mechanical operation that any man who is physically and mentally fit to be a soldier can learn to do well if properly instructed. But the methods of instruction must be the same as are used in teaching any mechanical operation. The soldier must be taught the various steps in their proper order and must be carefully watched and corrected whenever he makes a mistake.

Good shooting is more the result of careful instruction than of mere practice. Unless instructed, men instinctively do the wrong thing in firing the pistol. They instinctively jerk the trigger, which is the cause of flinching. Hence, mere practice fixes the instinctive bad habits.

If, however, a man has been first thoroughly instructed and drilled in the mechanism of correct shooting and is then carefully and properly coached when he begins firing, correct shooting habits rapidly become fixed.

The ultimate object of the training is to develop the ability to fire one or more accurate shots quickly, but training must begin with carefully coached slow fire to attain accuracy, and be followed by practice that will gradually shorten the time without sacrificing the accuracy.

Methods of Instruction.

Pistol instruction is divided into two phases—preparatory exercises and range firing. In the preparatory exercises the soldier learns practically all of the principles of good shooting. In range firing he cultivates the will power to apply these principles when using ball ammunition until proper fixed habits have been acquired.

The principles, of good shooting are simple and easy to learn except the trigger squeeze, which is difficult to apply to a loaded pistol. To this important item, most of the instructor's time will be devoted during the period of range practice.

There are six distinct steps in the preparatory work:

1. Aiming exercises.
2. Position exercises.
3. Trigger squeeze exercises.
4. Rapid fire exercises.
5. Quick fire exercises.
6. Examination on preparatory work.

The steps are progressive and must always be taught in proper sequence.

Each of the first five steps begins with a talk by the instructor and a demonstration by a squad which the instructor puts through the exercises that are to constitute the day's work. He shows how the corporal organizes the work in the squad so that no men are idle and how pairs coach each other when they are not under instruction by an officer or non-commissioned officer. He shows exactly how to execute each of the exercises about to be taken up and explains its purpose and application in pistol shooting.

The instructor who gives these very essential talks and demonstrations may be the organization commander, or he may be a specially qualified officer who has been detailed as battalion or regimental instructor. But the actual application of the demonstrated exercises to the men of the command must be by the officers and non-commissioned officers of the organization undergoing instruction.

Instruction must be thorough and must be individual. General instruction of groups of men is not enough. The instructors must see that each man understands each and every point and can explain it in his own words.

The blank form shown on page 14 must be kept by each squad leader and by each platoon leader independently. This blank form shows at a glance just how much each man knows about each feature of training and permits concentration of instruction where most needed.

Interest and enthusiasm must be sustained and everything possible should be done to stimulate them. If the exercises are carried out in a manner approximately correct and as a routine piece of work, results will be very disappointing.

The method of instructing in the essential points is shown in the questions and answers under the heading "Examination on preparatory instruction," page 19. This chapter should be consulted frequently by the instructor during the preliminary work and each man must be put through a thorough test along the lines indicated, before he is allowed to fire a shot.

It is of utmost importance that the trigger squeeze be explained in such a manner as to give the soldier a clear understanding of how it should be executed.

All authorities on shooting agree that the trigger must be squeezed with a steady increase of pressure. If a man knows when his pistol will go off it is because he *suddenly* gives the trigger all of the pressure necessary. Conversely, if the increase of pressure is steady the man cannot know when the pistol will be discharged. Hence, he is instructed *to squeeze the trigger in such a way as not to know just when the hammer will fall*. This does not mean that the process is necessarily a slow one and that it will take a comparatively long time to fire a shot. A man, *through training*, can reduce the time used in pressing the trigger to as brief a period as one second and still press it in such a manner that he does not know at just what part of the second the discharge will take place. When the soldier has acquired the ability to squeeze the trigger properly, even though it be very slowly, he soon learns to shorten the time without changing the process.

Whenever a man is in a firing position, whether it be at preparatory exercises or on the range, he must have a coach beside him to watch him and point out his errors.

None of the preparatory exercises are executed by command or in unison by a group of men. Instruction is at all times individual. The men are placed in pairs and alternate in coaching each other. This method gives each man the necessary physical rest without halting the progress of his instruction. He is learning while watching another man and attempting to correct his mistakes.

A great deal of preparatory practice is necessary in order to strengthen the muscles of the hand and arm and to fix the habit of correct trigger squeeze. The periods of exercise should not ordinarily be of long duration. Three or four 20-minute periods per day for a month will produce good results on the range. These periods of instruction can often be held during waits when troops are on maneuvers or field exercises. Some kind of a mark can always be found that will serve as an aiming point.

It is a good plan to have full-sized pistol targets placed in the vicinity of the barracks to encourage the men to spend part of their time in preparatory practice.

The preparatory exercises should be held out of doors, using full-sized pistol targets, but during inclement weather they can be held indoors, using miniature targets, with good results.

All men to take preparatory course. Every man who is to fire on the range should be put through the preparatory course. Part of the preparatory instruction may have escaped the men the previous year and part of it has certainly been forgotten; in any case, it will be beneficial to go over it anew and refresh the mind on the subject.

Non-commissioned officers should be put through a rigid test before the period of preparatory instruction for the organization begins.

Examination of pistols. Each man's pistol will be closely examined for defects before the beginning of the preparatory season.

First Step—Aiming Exercises.

Apparatus necessary for each squad:

One sighting bar.

One pistol rest.

Two small aiming disks.

One 5-inch aiming disk.

Two small boxes, with paper tacked on one side.

One piece of paper at least 2 feet squad and tacked on a wall or frame.

NOTE.—Men who have once been instructed in the aiming exercises, either in preparation for rifle firing or for pistol firing, will require very little instruction in aiming during subsequent seasons. They will, however, go through the aiming exercises at least once to verify their knowledge of this subject and to assign them a mark in the proper column on the blank form shown on page 14.

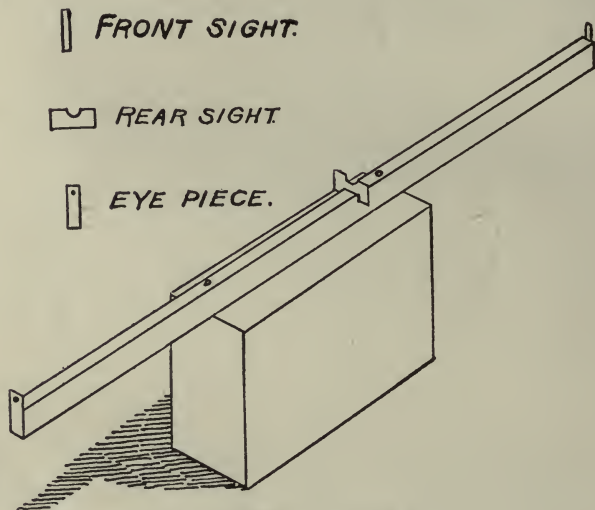


PLATE 2.—The Sighting Bar.

The *sighting bar* (Plate 2) consists of :

a. A bar of wood about 1 by 2 inches by 4 feet, with a thin slot 1 inch deep sawed across the edge about 20 inches from the end.

b. A front sight of tin or cardboard $\frac{1}{2}$ by 3 inches tacked to the end nearer the slot and projecting 1 inch above the bar.

c. An eyepiece of tin or cardboard 1 by 3 inches tacked to the other end of the bar and projecting 1 inch above the wood ; a very small hole (0.03 inch) is made $\frac{1}{2}$ inch from the top of the part projecting above the bar.

d. An open rear sight of tin or cardboard $1\frac{1}{2}$ by 3 inches, with a U-shaped notch $\frac{3}{4}$ inch wide cut in the center of one of the long edges. The rear sight is placed in the slot of the bar. A slight bend of the part of the tin that fits in the slot will prevent slipping of the sight.

Carefully blacken all pieces of tin or cardboard and the top of the bar. Nail the bar to a box about 1 foot high and place the box on the ground, table, or other suitable place.

The sighting bar is used in instruction for two reasons : First, the sights are larger than on the pistol and errors in aiming can be more easily seen and pointed out to the beginner ; second, the eyepiece of the sighting bar forces the man under instruction to place his eye so that he sees the sights in proper alignment and thus he learns how to align the sights of the pistol properly. Without an eyepiece the instructor cannot know whether or not the recruit has his eye in proper position.

The pistol rest. To construct a sighting rest for the pistol (Plate 3) take a piece of wood about 10 inches long, $1\frac{1}{4}$ inches wide, and $\frac{1}{8}$ inch thick. Shape one end so that it will fit snugly in the handle of the pistol when the magazine has been removed. Screw or nail this stick to the top of a post or other object at such an angle that the pistol when placed on the stick will have its barrel approximately horizontal. A suitable sighting rest for the revolver may also be easily improvised by cutting an additional notch, to hold the pistol, in one end of the box used as a rifle rest.

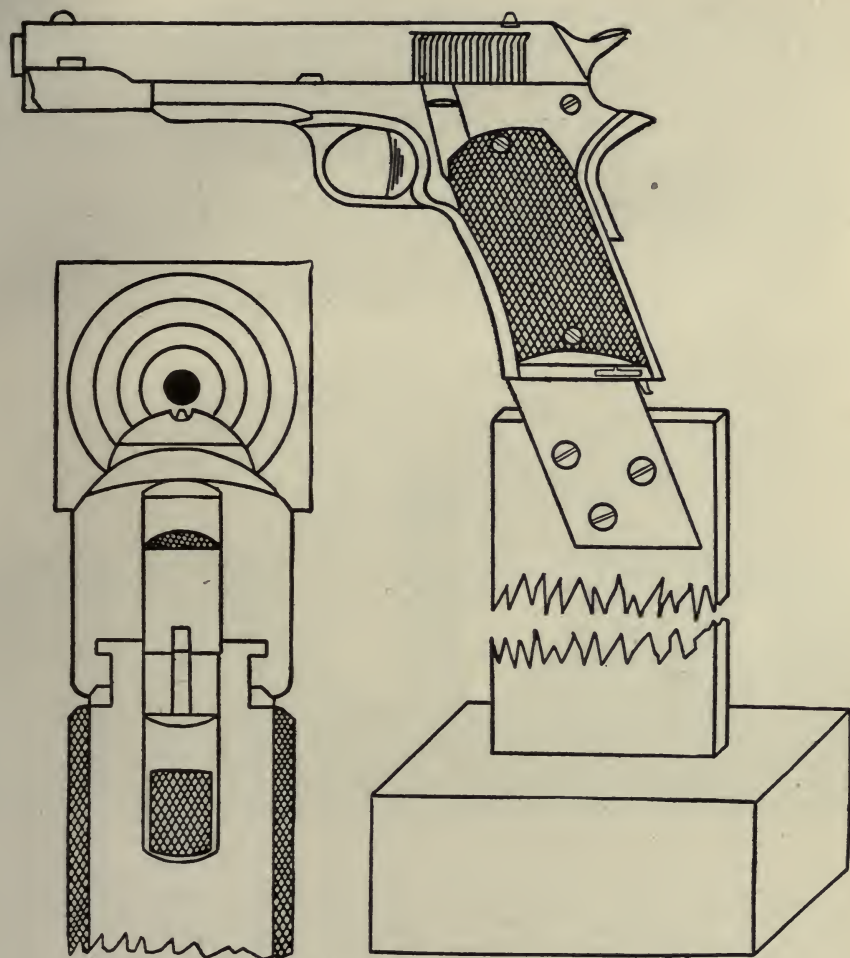


PLATE 3.—Sighting Rest.

Having first learned the principles of aiming by means of the sighting bar, the soldier is taught to apply them to the pistol on its rest.

Aiming disks. For each sighting bar and each pistol rest, a small disk (3 inches in diameter) is made of white cardboard or of tin with white paper pasted on it and with a small bull's-eye in the center. In the exact center of the bull's-eye is a small hole just large enough to admit the point of a pencil. For indoor or close range work the bull's-eye should not be larger than a 50-cent piece.

There should be one 5-inch aiming disk for each squad for triangle exercise at 50 yards. The large disk should be of tin, painted black, with a handle 4 or 5 feet long and of the same color as the paper on which the triangles are to be made.

First Sighting Exercise.

- a. Using the illustration (Plate 4), describe the normal open sight. Explain that the top of the front sight is seen through the *center* of the semicircle of the rear sight and that for a correct aim it barely touches the bottom of the bull's-eye; *all* of the bull's-eye can be clearly seen.
- b. Explain the sighting bar and tell why it is used.
- c. With the sighting bar, set the open sight for the normal sight and have each man in the squad look at the sights.
- d. Adjust the sights with various small errors in alignment and have each man look at them and tell what the errors are.



PLATE 4.—The Normal Open Sight.

- e. Have each man adjust the sights so that they are properly aligned.

The above exercises are first executed without a bull's-eye in order to get the alignment of sights. They are then executed with a small bull's-eye on a movable disk in order to combine sighting with aiming. It is easier to have a small bull's-eye on a disk moved to the line of aim than it is to adjust the sighting bar on a fixed bull's-eye.

The object of the exercise is to show the importance of uniform and correct aiming and to instill into the mind a sense of exactness.

Second Sighting Exercise.

a. With the pistol on the pistol rest and the sights pointing at a blank sheet of paper on a board or on the wall, stand with the head in the same relative position as in firing the pistol and look through the sights. Then by signal or by word have the disk moved until the bottom edge of the bull's-eye is in exact alignment with the sights. Then command "HOLD" and move away from the pistol and let the man undergoing instruction look through the sights to see what is a proper aim.

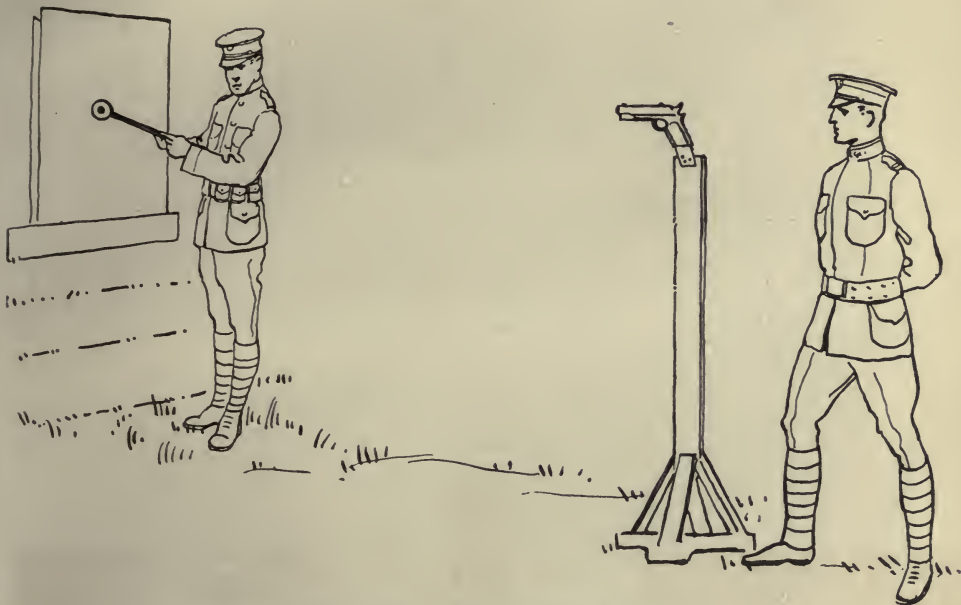


PLATE 5.—Pistol Rest Sighting Exercise.

b. Have the man under instruction look through the sights while he directs the disk to be moved until the sights are aligned on the bottom of the bull's-eye. The instructor then looks through the sights to see if any error has been made.

c. Have the sights adjusted on the bull's-eye with various very slight errors and see if the man under instruction can detect them readily.

Third Sighting Exercise.

Using the sighting rest for the pistol, require the man under instruction to direct the marker to move the disk until the sights are aimed at the bottom edge of the bull's-eye and to command "HOLD." The instructor then looks at the aim and after noticing whether the aim is right or wrong, commands "MARK." The marker, without moving the disk, makes with a pencil a mark on the paper through the hole in the center of the bull's-eye. Repeat the operation until three marks have been made. The instructor looks at the aim each time, but he says nothing to the man until all three marks have been made and joined together so as to make a triangle. The faults, if any, are then pointed out. The size and shape of the triangle will be discussed and the exercise will be repeated several times. At 30 feet, using the small bull's-eye, the triangle should be small enough to be covered by a dime.

This exercise should also be held, during the period of the preliminary training, at 50 yards on a 5-inch movable bull's-eye. The long range triangle exercise teaches the men to aim accurately at a distant bull's-eye of which the outlines are indistinct and, if the exercise is properly handled, helps greatly to sustain interest in the work.

Blank Form.

This blank form is used during the period of preparatory training. Its object is to show at all times the state of instruction of each man, and to insure his thorough instruction in all necessary points before range practice begins.

| Names | Recruit instruction | | | | Pistol marksmanship--dismounted | | | | | | | | | | Remarks | |
|-------|---------------------------|--------------------|------------------------|-------------------|---------------------------------|--------------------------------|--------------------|----------------------|-------------------|--------------------------|---------------------------------|---------------------|---------------------|--------------------|---------|-------------------|
| | Functioning and operation | Safety precautions | Test of safety devices | Care and cleaning | Sighting bar | Exercises with the pistol rest | Holding the breath | Position of the hand | Position exercise | Trigger squeeze exercise | Instruction in calling the shot | Rapid-fire exercise | Quick-fire exercise | Ability as a coach | | Final examination |
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Method of marking:

x

Indicates a little instruction

x

x

Indicates "fair"

x

x

x

Indicates "good"

x

x

x

x

x

Indicates "very good"

x

x

x

x

x

Indicates "excellent"

Second Step—Position.

To assume the proper position for firing it is necessary to know: How to aim; how to grasp the pistol; how to hold the breath properly; and the correct position of the body with relation to the target.

A detailed line drawing of a right hand in a shirt sleeve, firmly grasping a semi-automatic pistol. The hand is positioned to show the grip, with the thumb bent slightly downward and the fingers wrapped around the textured grip. The pistol is held horizontally, pointing to the left. The drawing illustrates the 'Pistol Grasp' technique described in the text.

How to grasp the pistol. The hand is close up on the stock so as to bring the barrel as nearly in prolongation of the forearm as possible. The fingers grasp the stock firmly but not with a tense grip. The index finger is the trigger finger. The grasp on the trigger is with that part of the finger which touches the trigger naturally when a firm comfortable grip is taken on the stock. With the normal hand this will be the first joint, but the exact position will vary slightly with the size of the hand.

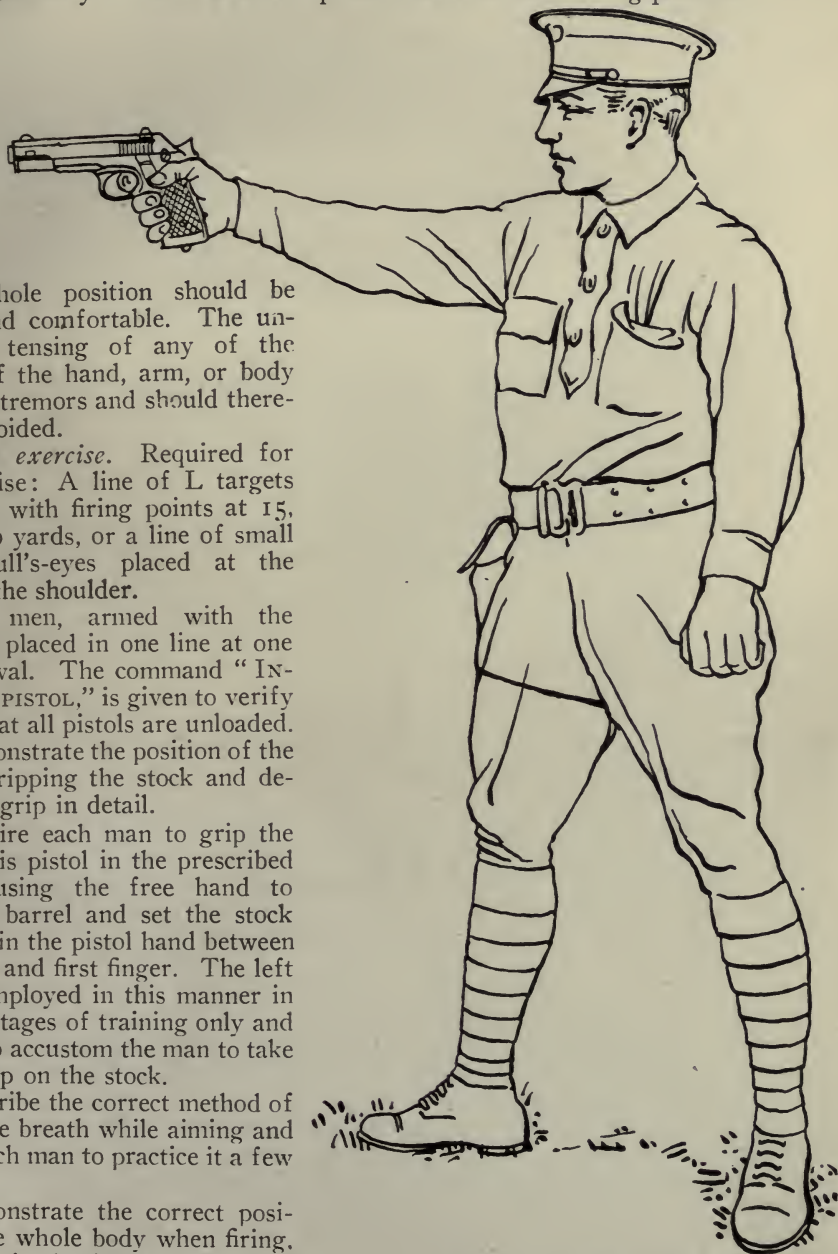
The thumb is bent slightly downward to assist in gripping the stock, but it should not touch the end of the middle finger as this would interfere with the grip.

PLATE 6.
Pistol Grasp.

How to hold the breath. The proper method of holding the breath is important because many men, without instruction, hold the breath in the wrong way or do not hold it at all.

To hold the breath, draw into the lungs a little more than an ordinary breath, let a little of the air out and stop the rest by closing the throat. Do not hold the breath with the throat open or by the muscular effort of the diaphragm.

Position of the body. The position of the body is: A little more than half faced to the left, the feet 12 to 18 inches apart, depending on the man, the head erect, and the body perfectly balanced when the pistol is held in the shooting position.



The whole position should be natural and comfortable. The unnecessary tensing of any of the muscles of the hand, arm, or body will cause tremors and should therefore be avoided.

Position exercise. Required for this exercise: A line of L targets (Plate 7) with firing points at 15, 25, and 50 yards, or a line of small aiming bull's-eyes placed at the height of the shoulder.

a. The men, armed with the pistol, are placed in one line at one pace interval. The command "INSPECTION, PISTOL," is given to verify the fact that all pistols are unloaded.

b. Demonstrate the position of the hand in gripping the stock and describe the grip in detail.

c. Require each man to grip the stock of his pistol in the prescribed manner, using the free hand to grasp the barrel and set the stock well back in the pistol hand between the thumb and first finger. The left hand is employed in this manner in the early stages of training only and in order to accustom the man to take a close grip on the stock.

d. Describe the correct method of holding the breath while aiming and require each man to practice it a few times.

e. Demonstrate the correct position of the whole body when firing, explaining in detail the position of the feet, head, and arms.

PLATE 7.—Position of the Body.

f. Require each man to assume the correct firing position. The officers and non-commissioned officers of the organization correct individuals who are at fault.

The above exercises having been completed, instruction becomes individual, under a coach. The men are placed in pairs opposite L targets or opposite small aiming bull's-eyes and take turns coaching each other. The officers and non-commissioned officers assist in the coaching and correct errors, either on the part of the man going through the exercise or on the part of the man acting as coach.

The details of the individual position exercise are:

1. Grasp the stock with the correct grip.
2. Half face to the left.
3. Place the feet the proper distance apart (12 to 18 inches, depending on the man).
4. Align the sights on the bottom edge of the bull's-eye, arm fully extended.
5. Hold the breath.
6. As soon as the arm becomes tired or the aim becomes unsteady, assume the position of "Raise, pistol."

The hammer is not raised during the position exercises and the trigger is grasped very lightly with the finger.

After a short rest repeat the exercise.

The man acting as coach watches carefully and corrects all errors.

The man under instruction and the coach change places every five or ten minutes.

Only a few hours in all should be devoted to the position exercises, as all of its details are included in the Trigger Squeeze Exercise.

Kneeling and prone positions. Although the use of the kneeling and prone positions in firing the pistol will be unusual in war, occasions may arise necessitating such use. The soldier will therefore be given sufficient practice to understand these positions and to be able to assume them readily.

It is also advisable to have recruits begin range practice in the prone and the kneeling positions. The object is not to teach steadiness of hold but to *assure* such a steady hold that the recruit can acquire the habit of correct trigger squeeze.

Beginning in the more insecure standing position, the recruit is prone to attempt to snap in the shot at the instant the sights become accurately aligned on the bull's-eye, with the almost invariable result of a poor hit or a miss. But having acquired the habit of correct trigger squeeze while in a secure position he will usually continue it when firing standing.

Kneeling position. Half face to the right and kneel on the right knee, sitting if possible on the right heel; place the left arm on the left knee with the elbow well in front of the knee cap; grasp the right wrist with the left hand, palm up, the right arm fully extended.

This position insures steadiness of hold and excellent shooting is possible.

Prone position. Lie down with the body extending in the direction of the target; extend both arms well to the front; with the right hand grasping the pistol, place it well into the left hand so that the left hand incloses the pistol butt and the last three fingers of the right hand; the lower side of the left hand rests on the ground.

Third Step—Trigger Squeeze.

The recruit can readily learn to aim and to hold the aim, either on the bull's-eye or very close to it, for at least 10 seconds. When he has learned to press the trigger in such a manner as not to spoil this hold, he becomes a good shot.

All men flinch in firing the pistol if they know the exact instant at which the discharge is to take place. This is an involuntary action which cannot be controlled.

A sudden pressure of the trigger may derange the aim only slightly, but the extreme inaccuracy of a shot fired in this way is mainly due to the flinch, *i. e.*, the thrusting forward of the hand to meet the shock that always accompanies this kind of trigger pressure.

Any man who holds the sights of the pistol as nearly on the bull's-eye as possible, and continues to press on the trigger until the pistol goes off unexpectedly, is a *good shot*.

Any man who has learned to increase the pressure on the trigger *only* when the sights are in alignment with the bull's-eye, who holds the pressure when the muzzle swerves and who continues with the pressure when the sights are again in line with the bull's-eye, is an *excellent* shot.

Any man who tries to "catch his sights" as they touch the bull's-eye and to set the pistol off at that instant is a *very bad shot*.

The apparent unsteadiness of the pistol while being held on the bull's-eye does not cause much variation in the striking place of the bullet, due to the fact that the movement is of the whole extended arm and pistol.

But a sudden pressure on the trigger, accompanied by the unfailing flinch, will deflect the muzzle of the pistol only, which will cause the bullet to strike far from the mark.

In squeezing the trigger, the pressure must be *straight* to the rear. There is a tendency on the part of some men to press the trigger also to the left.

Calling the shot. To call the shot is to state where the sights were pointed at the instant the hammer fell. Thus: "High"; "a little low"; "to the left"; "slightly to the right"; "bull's-eye"; etc.

If the soldier cannot call his shot correcting in range practice, he did not press the trigger properly and consequently did not know where the sights were pointed when the hammer fell.

Trigger-squeeze exercise. Require for this exercise: A line of L targets with firing points at 15, 25, and 50 yards, or a line of aiming bull's-eyes placed at the height of the shoulder.

a. Give the command "INSPECTION, PISTOL," and verify the fact that all pistols are unloaded.

b. Explain to the assembled command the trigger squeeze in detail and give the reasons therefor.

c. Have each man practice this method of pressing the trigger several times while holding the piece at the position of "Raise, pistol."

The instruction then becomes individual under a coach. The men are placed in pairs opposite L targets or opposite small aiming bull's-eyes and take turns in coaching each other. The officers and non-commissioned officers correct errors, either on the part of the man going through the exercise or of the man acting as coach.

The details of the individual trigger-squeeze exercise are:

1. Grasp the stock with the correct grip.
2. Half face to the left.
3. Place the feet the proper distance apart (12 to 18 inches, depending on the man).
4. Bring the hammer of the pistol to full cock.
5. Align the sights on the bottom edge of the bull's-eye, arm fully extended.
7. Squeeze the trigger (*only* while the sights are properly aligned and *only* with a steady pressure).
8. As soon as the hammer falls, call the shot.
9. Bring the piece to the position of "Raise, pistol."

After a short rest, cock the pistol and repeat the aiming and the squeezing of the trigger, calling the shot each time the hammer falls.

If the arm becomes unsteady and the man uncertain in his aim he should resume the position of "Raise, pistol" without completing the trigger squeeze.

The man under instruction and the man acting as coach change places every 5 or 10 minutes.

Accuracy in shooting, once acquired in slow fire, is easily maintained in rapid fire. As previously stated, it is good practice to begin the trigger-squeeze exercise for recruits in the prone and kneeling positions, but when the recruit thoroughly understands the correct method of pressing the trigger, the exercise should be practiced in the standing position which gives the necessary training to the muscles of the arm and wrist. Extended trigger-squeeze exercise is necessary. The periods should be short but frequent.

Fourth Step—Rapid Fire.

Training for rapid fire is taken up after the trigger-squeeze exercise has been practiced sufficiently to be thoroughly understood, but the trigger-squeeze exercise, practice in slow fire, should be resumed and continued during the entire period of preparatory training.

The time consumed in pressing the trigger must necessarily be shorter in rapid fire than in slow fire, but the process is the same.

To fire the first shot, the pistol should be brought by the shortest route to the aiming position with the sights aligned on the mark. To bring the pistol through the arc of a circle to the aiming position is an unnecessary loss of valuable time.

When firing is to be continued at the same mark, as is the case in rapid fire, the sights should be held as nearly on the mark as possible for all succeeding shots. The recoil will throw the sights out of alignment after each shot, but they should be brought back to the mark immediately by the shortest route. To give the pistol a flourish between shots is a useless loss of valuable time.

To simulate the self-loading action of the automatic pistol: Take a strong cord about 4 feet 6 inches long and tie one end to the thumb piece of the hammer, *the knot on top*. Take a few turns of the other end of the cord around the thumb or fingers of the left hand. The cord should be long enough to permit the left hand to hang naturally at the side while aiming the pistol with the right hand, right arm fully extended.

Each time the hammer falls a quick backward jerk of the left hand recocks the pistol and at the same time jerks the sights out of alignment with the bull's-eye. This derangement of the alignment corresponds very closely to the jump of the pistol when actually firing.

If the knot is underneath the hammer or if a very thick cord is used the hammer will not remain cocked when jerked back.

Rapid-fire exercise. Required for this exercise: A piece of strong cord $4\frac{1}{2}$ feet long for each man; a row of L targets or a row of aiming bull's-eyes.

a. Give the command "INSPECTION, PISTOL," and verify the fact that all pistols are unloaded.

b. Explain to the assembled command that the trigger squeeze is the same in rapid fire as in slow fire.

c. Demonstrate the correct method of bringing the pistol by the shortest route to the aiming position. Show how this is done both from "Raise, pistol," and in drawing the pistol from the holster in an emergency.

d. Show how to tie the cord to the thumb piece of the hammer and cause each man to adjust his cord.

e. Demonstrate the method of cocking the pistol by means of the cord and explain how this simulates the self-loading action of the pistol.

f. Show how the pistol is kept as nearly on the mark as possible during the whole score. Caution the men to avoid unnecessary flourishes or movements between shots.

The above demonstrations having been completed, the men are placed in front of the line of targets in pairs, one to practice and one to coach. The exercise is then carried on exactly the same as rapid fire in rang practice. If a line of disappearing targets has been arranged for this exercise, the targets appear, remain in sight the allotted time, and then disappear. While the targets are in sight each man undergoing instruction attempts to fire seven shots (simulated fire), cocking the piece for each shot, except the first, by a jerk on the cord with the left hand.

If the targets are stationary the exercise begins with the command "COMMENCE FIRING" and ends with the command "CEASE FIRING."

After each three or four scores of simulated fire the men of each pair are directed to change places, the firer becoming the coach and the coach becoming the firer.

In this exercise the coach watches the man carefully and corrects all errors in grip, position, trigger squeeze, and manipulation of the piece, paying particular attention to the trigger squeeze.

Rapid-fire exercises should be frequent but not of long duration.

It is advisable to extend the time limit several seconds when rapid-fire exercise is first taken up. The time limit is then gradually reduced until it corresponds to the time prescribed for range firing, record practice.

Fifth Step—Quick Fire.

The training for quick fire is taken up after the rapid-fire exercise has been practiced sufficiently to be thoroughly understood. Thereafter, exercises in slow fire, rapid fire, and quick fire should all be continued until the end of the period of preparatory training.

For each shot the pistol is brought from "Raise, pistol" to the aiming position by the shortest route.

The pistol may be cocked after each shot in this exercise either by means of a cord, as in rapid-fire exercise, or by using the left hand to pull the hammer back after the position of "Raise, pistol" is resumed.

Quick-fire exercise. Required for this exercise: A line of E targets that can be operated as bobbing targets from a pit or screen, or a line of E targets so arranged on pivots that the edge can be turned toward the firer when the target is not exposed.

a. Give the command "INSPECTION, PISTOL," and verify the fact that all pistols are unloaded.

b. Explain to the assembled command that the trigger squeeze is the same in quick fire as in slow fire.

c. Demonstrate the correct method of bringing the piece from "Raise, pistol" to the aiming position.

d. Show how the pistol is cocked between shots, when the left hand is used instead of the cord.

The above demonstrations having been completed, the men are placed in pairs in front of the line of bobbing targets, one man of each pair to act as coach for the other man.

The exercise is then carried on exactly the same as quick fire in range practice. The targets appear, remain in sight the allotted time, and then disappear. While the targets are in sight each man who is undergoing instruction aims, fires one shot (simulated fire), and return his piece to the position of "Raise, pistol."

After three or four scores of simulated fire the men of each pair are directed to change places.

The coach watches carefully the man going through the exercises and corrects all errors in the grip, position, trigger squeeze, and the manipulation of the piece, paying particular attention to the trigger squeeze.

It is advisable to extend the time limit about two seconds for each shot when quick-fire exercise is first taken up. The time is then gradually reduced until it corresponds to the time prescribed for range firing, record practice.

When disappearing targets cannot be provided for this exercise it may be held with stationary E targets. The command "Up" is given to signify that the targets are in sight, and the command "Down" to signify that they have been withdrawn.

Practice in quick fire should be held frequently, but the periods of practice should not be of long duration.

Sixth Step—Examination on Preparatory Instruction.

NOTE.—The answers given herein are merely examples. Each man should be required to explain each item in his own words.

INSTRUCTOR. Examine your pistol to see that it is unloaded.

Q. What are the safety devices of the pistol?

A. The safety lock, the grip safety, the half-cock notch, and the disconnecter.

Q. Show me how you test the safety lock.

A. I cock the pistol, move the safety lock up into place, and then grip the stock and see if the hammer remains up when pressure is applied to the trigger.

Q. Show me how you test the grip safety.

A. I cock the pistol, see that the safety lock is down, and then, without putting any pressure on the grip safety, I see if the hammer will remain up when a strong pressure is applied to the trigger.

Q. Show me how you test the half-cock safety device.

A. I half-cock the pistol, grip the stock, and see if the hammer remains at half cock when pressure is applied to the trigger. Then I take my finger off the trigger, pull the hammer back almost to full cock, and let go of it to see if it stops at half cock as it falls.

Q. Show me how you test the disconnecter.

A. I cock the pistol and grip the stock; then with my left hand I move the slide to the rear a quarter of an inch; I then apply a strong pressure on the trigger and release the slide to see if the hammer will remain up. I also pull the slide fully back until it is held in place by the slide stop; then I grip the stock, apply a strong pressure on the trigger and release the slide by pressing down the slide stop with my left hand. The hammer should remain up after the slide moves forward into place.

Q. If the hammer does not remain up after the slide moves forward into place what does it indicate?

A. That with ball ammunition the pistol would continue to fire automatically as long as pressure is maintained on the trigger, which is very dangerous.

Q. If any of the tests of the safety devices fail at any time what should you do?

A. I should report the matter at once to my platoon or company commander.

Q. What is this [indicating a sighting bar]?

A. A sighting bar.

Q. What is it used for?

A. To teach men how to aim.

Q. Why is it better than a pistol for this purpose?

A. Because the sights are much larger and slight errors can be more easily seen and pointed out.

Q. What does this represent?

A. The front sight.

Q. What does this represent?

A. The rear sight.

Q. What is this?

A. The eyepiece.

Q. What is it for?

A. To make the man hold his head in the right place, so that he will see the sights properly aligned.

Q. Is there an eyepiece on the pistol?

A. No; a man learns by the sighting bar how the sights look when properly aligned and he must hold the pistol while aiming so as to see the sights in the same way.

Q. Adjust the sights of this sighting bar so that they are in proper alignment with each other. (Verified by instructor.)

Q. Now that the sights are properly adjusted, have the small bull's-eye moved until the sights are aimed at it properly. (Verified by instructor.)

Q. Tell me what is wrong with this aim. (The instructor now adjusts the sights of the sighting bar on the bull's-eye with various very slight errors, requiring the man to point out the error.)

Q. Show me how you grip the shock of the pistol.

Q. Show me the position you take when you are going to shoot, standing; kneeling; or prone.

Q. How do you squeeze the trigger?

A. I squeeze it with such a steady increase of pressure as not to know exactly when the hammer will fall.

Q. If the sights are slightly out of alignment while you are squeezing the trigger what do you do?

A. I hold the pressure I have on the trigger and only go on with the increase of pressure when the sights become aligned again.

Q. If you do this can your shot be a bad one?

A. No.

Q. Why?

A. Because I cannot flinch, for I do not know when to flinch, and the sights will always be lined up with the bull's-eye when the shot is fired, because I never increase the pressure on the trigger except when the sights are properly aligned.

Q. When you are practising in slow fire and your arm becomes unsteady and your aim uncertain, what should you do?

A. I should come back to "Raise, pistol" without firing the shot and then try again after a short rest.

Q. If it is impossible for you to hold the pistol very steady, can you still do good shooting?

A. Yes, if I press the trigger properly.

Q. Tell me why that is.

A. Because the natural unsteadiness of the arm moves the whole pistol, and the barrel remains nearly parallel to the line of sight. But if I give the trigger a sudden pressure the front end of the barrel will be thrown out of line with the target, and the bullets will strike far out from the mark.

Q. What causes this deflection of one end of the pistol when the trigger is given a sudden pressure?

A. The sudden pressure itself causes some of it, but most of it is caused by the flinch that always accompanies this kind of a trigger pressure.

Q. What does a man do when he flinches in shooting a pistol?

A. He usually thrusts his hand forward as if trying to meet the shock by suddenly stiffening all his muscles.

Q. Must the trigger always be squeezed slowly in order to do it correctly?

A. No. I squeeze it the same way in rapid fire and quick fire. The time is shorter but the process is the same.

Q. What is meant by calling the shot?

A. To say where you think the bullet will hit as soon as you shoot and before the shot is marked.

Q. How can you do this?

A. By noticing exactly where the sights point at the time the pistol is fired.

Q. If a man cannot call his shot correctly, what does it indicate?

A. That he did not squeeze the trigger properly and consequently did not know where the sights were pointed at the instant the discharge took place.

Q. Show me how you hold your breath while aiming.

Q. Take your pistol. Aim at that bull's-eye and squeeze the trigger a few times, calling the shot each time. (The instructor particularly notes the holding of the breath.)

Q. Show me how you come to a position of aim from "Raise, pistol."

Q. Show me how you come to the aiming position in drawing the pistol from the holster in an emergency.

Q. Take this pistol with the cord tied to the hammer and fire a rapid-fire score at that target (simulated fire).

Q. Fire a score (simulated fire) at that quick-fire target. I will give the command "Up" when it is supposed to come into sight, and the command "Down" when it is supposed to be withdrawn from view.

Q. What do you do in case a cartridge misses fire?

A. I bring the piece to "Raise, pistol," grasp the slide with my left thumb and finger, pull the slide fully back and let go of it. This throws out the faulty cartridge and loads in another cartridge.

Q. Are there any points about pistol firing that you do not understand?

NOTE.—In all the demonstrations by the man undergoing examination the instructor carefully notes all points that are covered in the preparatory exercises.

Gallery Practice.

The gallery practice pistol. The provisions of this chapter will apply as soon as the automatic pistol, caliber .22, is issued to the service.

Value of gallery practice. After the soldier has been thoroughly instructed in the preceding steps he will be advanced to gallery practice. It is difficult to hold the soldier's interest in preliminary exercises if they are unduly prolonged. Gallery practice, however, with its actual firing and observed results, stimulates competitive endeavor. Rapid progress, particularly in teaching the trigger squeeze, may be made. As there is no recoil nor loud report to induce flinching or nervousness, the soldier soon learns that he can make good scores. Not only to the beginner is gallery practice of value; to the good shot it is a means of retaining efficiency throughout the year; continued practice is essential in maintaining pistol marksmanship.

Gallery practice. During the month preceding range firing, the minimum number of scores shown in the following table will be fired by all who are required to fire. The procedure of firing is similar to that in range firing. No reports of the results of gallery practice are required, but the firing record should be posted in order to stimulate interest and competition among the men.

| Range | Slow-fire target | | Rapid-fire target | | Quick-fire target | |
|---------------|---------------------------------------|--------|----------------------|--------|--------------------|--------|
| | Iron gallery target or paper target X | | Same as slow fire | | Target E—Bobbing | |
| | Time | Scores | Time | Scores | Time | Scores |
| 5 yards..... | No time limit.. | 2 | 15 seconds per score | 2 | | |
| 10 yards..... |do..... | 2 |do..... | 2 | | |
| 15 yards..... | | | | | 2 seconds per shot | 2 |

Additional practice. In addition to the minimum number of scores prescribed in the foregoing table, gallery practice should be carried on throughout the year, the amount and details of the practice being left to the discretion of the organization commander. Varied targets, such as tin cans, bottles, glass balls, and pendulum or moving targets will stimulate interest.

Matches. Matches between the men and between teams of the same or different units should be promoted and encouraged throughout the year.

Coaching Methods and Organization.

The object of range practice is to teach men to apply, with a loaded pistol, the principles of good shooting that they have learned during the preparatory exercises.

Each man while firing must have a coach to correct him whenever he violates any of these principles.

Slow-fire practice should be carried on until the men under instruction thoroughly understand the principles of good shooting.

When rapid fire and quick fire are first taken up, the time limit should be extended a few seconds. The time should then be gradually reduced until the scores are being fired in the time prescribed for record practice.

Dummy cartridges. Dummy cartridges are of great value in teaching both slow and rapid fire. If sufficient dummy cartridges have not been received from the Ordnance Department they may be made from service ammunition. To make a dummy cartridge, bore a small hole ($\frac{1}{8}$ inch) in the powder space of the shell; shake the powder out through the hole; place the cartridge between two blocks of wood which have grooves cut to fit the cartridge and leave the hole free so that the gas can escape; lock the blocks of wood in a vise and snap the primer with a large nail.

The primer should not be snapped in the pistol because sufficient gas is generated by the primer to drive the bullet into the barrel. If the bullet is displaced when the primer is snapped in a vise it should be driven back to place.

Dummy cartridges will not be used except on the firing line of the pistol range. The same precautions will be observed as in using service ammunition.

Coaching slow fire. The coach stands on the left side of the firer in such a position as to be able to observe his trigger finger, his grip, his eye, and his position.

It is the duty of the coach to correct all errors.

The coach fills the magazines for the firer and hands them to him. At the beginning of range practice the magazines should be filled partly with service ammunition and partly with dummy cartridges. The firer must not know how many dummy cartridges are in the magazine or the order in which they are placed.

The object of placing dummy cartridges in the magazine is to show the coach whether or not the man under instruction is squeezing the trigger correctly, and, in case of an improper trigger squeeze, to bring the fact forcibly to the attention of the firer himself. When a loaded cartridge is fired the flinch is often masked by the recoil of the pistol and the firer is not conscious of having flinched. When the hammer falls on a dummy cartridge, which the firer thinks is loaded, the sudden stiffening of the muscles and the thrusting forward of the hand to meet the shock, that does not come, is apparent to everybody in the vicinity, including the firer himself. The mixing of dummy cartridges with service ammunition causes the man to make a determined effort to press the trigger properly for all shots.

The firing of scores with dummy cartridges and service ammunition mixed should not be confined to the early stages of training. It is advisable to have some practice of this kind each day during the entire period of instruction practice. Many expert pistol shots use this form of practice in training for competitions.

Coach squeezing the trigger. One method of showing the man under instruction how to squeeze the trigger properly is to have him hold and aim the pistol while the coach presses the trigger. To do this, the coach places his left forefinger over the end of the firer's trigger finger and his left thumb on the firer's hand just below the hammer. Then by a pinching action between thumb and finger the coach applies a steady pressure to the trigger, through the finger of the firer, until the hammer falls. Shots fired in this way are nearly always good ones. If the firer shows a tendency to apply the last part of the squeeze himself, by giving the trigger a sudden pressure, he is directed to place his finger below the trigger guard and the coach applies the pressure directly to the trigger instead of through the finger of the man under instruction.

Calling the shot. Men should be required to call each shot in slow fire. If a man does not call the shot immediately after firing the coach directs him to do so.

Coaching rapid fire. The firing of scores with dummy cartridges and service ammunition mixed is a very valuable form of rapid fire practice. The coach fills the magazine in such a way that the firer cannot know the order in which the cartridges are placed.

The coach must watch the man closely, and each time he is seen to flinch, whether on a loaded or a dummy cartridge, the coach should caution him.

When the hammer falls on a dummy cartridge the firer grasps the slide with his left hand, pulls it fully back and releases it. This ejects the dummy and loads in another cartridge. The time limit must be extended to compensate for the time lost in ejecting the dummy cartridges. It should not take more than two seconds to eject a dummy cartridge and resume the aiming position.

Coaching quick fire. The use of dummy cartridges and the coaching methods are the same in quick fire as in rapid fire.

The occasional use of dummy cartridges in both rapid fire and quick fire should be continued throughout the entire period of instruction practice.

Safety precautions on the range. a. Never place a loaded magazine in the pistol until you have taken your place at the firing point.

b. Always remove the magazine and unload the pistol before leaving the firing point.

c. Always hold the loaded pistol at the position of "Raise, pistol," except while aiming.

d. When firing ceases temporarily, lock the piece and hold it at "Raise, pistol." Do not assume any position except "Raise, pistol," without first removing the magazine and unloading.

e. If one or more cartridges remain unfired at the end of a rapid-fire or quick-fire score, remove the magazine and unload immediately.

Range organization. The work on the range should be so organized that no men are idle for any length of time.

When range facilities permit, rifle firing and dismounted pistol firing should be carried on at the same time. One method is to have a line of pistol targets on the flank of each firing point of the rifle range, so arranged that the firing points of the rifle range and of the pistol range are on one line. There should be about 50 yards interval between the rifle range and the pistol range. The targets may be placed on the ground instead of in pits. The bobbing targets are arranged to revolve on their own axis and are operated from behind the firing line by means of cords. When the targets are to be marked the whole line ceases firing, unloads pistols and moves up to the targets to record the hits and paste the shot holes. In slow fire, the coach can keep the firer informed as to the location of his hits by the use of field glasses.

When rifle firing and pistol firing are carried on at the same time the class is usually divided into two groups. While one group is firing on the rifle range the other is firing on the pistol range. As the men complete a score with the rifle they move to the pistol range and their places at the rifle firing point are filled by men who have completed a score of pistol firing. As soon as all men present have completed their scores with the rifle, the whole group moves back to the next firing point (moving the pistol targets if necessary) and continues as before with the alternate rifle and pistol firing.

The pistol targets may be placed so that the line of fire is at right angles to the line of fire of the rifle range if the terrain permits.

When it is not practicable to have pistol firing and rifle firing at the same time, other means will be adopted to keep the men occupied while they are not actually firing or coaching.

General Provisions.

Plan for range firing. The general plan is as follows:

| | Yards | Minimum
of scores | Rounds |
|-----------------------------|----------|----------------------|--------|
| INSTRUCTION PRACTICE | | | |
| Slow fire..... | 15 | 2 | 14 |
| | 25 | 2 | 14 |
| | 50 | 1 | 7 |
| Rapid fire | 15 | 2 | 14 |
| | 25 | 2 | 14 |
| Quick fire | 15 | 2 | 14 |
| | 25 | 2 | 14 |
| Skirmish run | 50 to 15 | 1 | 7 |
| RECORD PRACTICE | | | |
| Slow fire..... | 25 | 1 | 7 |
| | 50 | 1 | 7 |
| Rapid fire | 15 | 2 | 14 |
| | 25 | 2 | 14 |
| Quick fire | 25 | 2 | 14 |
| | 50 | 2 | 14 |
| | | | — 70 |
| | | | 168 |

Who will fire. All officers armed with the pistol and with less than 15 years' service, commissioned or commissioned and enlisted, and all enlisted men armed with the pistol are required to fire the dismounted pistol course. Officers armed with the pistol and with over 15 years' service, commissioned or commissioned and enlisted, are authorized but not required to fire.

Ammunition allowance. As published in War Department Special Regulations.

Instruction practice. In order to insure uniformity of instruction the order of procedure and a minimum number of shots are prescribed. In order that the expenditure of ammunition may be fully under the control of the organization commander he may advance men who have fired during a preceding season without requiring them to fire the full number of shots prescribed as a minimum for any type of fire in instruction practice, provided that they fire at least one-half the minimum. In the exercise of this privilege, however, the organization commander should guard against depriving the soldier of needed practice.

Record practice. In all record practice, scores will be kept and the record of firing prepared as prescribed for rifle firing.

a. Scoring in rapid and quick fire. In rapid or quick fire the scores does not announce the name of the firer after the result of each shot has been signaled. As soon as the value of each shot has been signaled it is announced; the number of misses, if any, is announced; the score is then entered; and finally the name of the firer with his total score is announced and the latter recorded.

b. Firing on wrong target. In case two men fire on the same target in rapid or quick fire, the resulting score will be rejected; the soldier at fault will be credited with such hits as he may have made on his own target and the other soldier will fire again.

c. Other mishaps. Unfired shots, due to the fault of the soldier, count as misses. In case of defective cartridge or disabled weapon, the entire score is not repeated; the soldier fires only the necessary number of shots to complete the unfinished score; where the time element enters, the time to be allowed will bear the same ratio to the time of a full score as does the number of shots to be fired to the number in a full score. For each shot fired before the commencement or after the close of the time limit the maximum possible per shot at the particular type of target will be deducted from the score.

Order of procedure in range firing. Pistol firing commences with instruction practice, which is completed for each soldier before he proceeds to record practice.

The soldier may thus be advanced to record practice immediately after he has completed instruction practice without waiting for others less advanced. While engaged in record practice the soldier will do no other firing.

Modification of course. Whenever the exigencies of the service do not permit of the firing of the prescribed course in full, the commanding general of a department, corps area, or of a tactical division in the field is authorized to modify the course with a view to securing the maximum of training within the limits of time and ammunition allowance; but neither officers nor enlisted personnel who do not fire the course regularly prescribed in these regulations, shall be classified.

Instruction Practice.

Tabulation. The following tables prescribe the firing in instruction practice in the order followed by the individual soldier. Target L is used in much of the practice, as the bull's-eye makes competition keener and shows up errors as no other target can.

Slow fire.

TABLE I.—Slow fire—Target L.

| Range | Time | Scores minimum |
|----------------|---------------------|----------------|
| 15 yards | No time limit | 2 |
| 25 yards |do | 2 |
| 50 yards |do | 1 |

Unlimited time is permitted in slow fire in order to permit proper explanation of the causes of errors and indication of corresponding remedies. It is intended to be the elementary phase of instruction in the proper manipulation of the weapon and for determining and correcting the personal errors of the firer.

Rapid fire.

TABLE II.—*Rapid fire—Target L.*

| Range | Time | Scores minimum |
|----------------|---|----------------|
| 15 yards | 1 score in 30 seconds and 1 score in 15 seconds.... | 2 |
| 25 yards | 1 score in 30 seconds and 1 score in 20 seconds.... | 2 |

Time is taken at the firing point. The target being up, the soldier stands with weapon at “Raise, pistol,” loaded and locked. The command “COMMENCE FIRING” is given and the soldier must fire seven shots within the prescribed limit of time, at the end of which the command “CEASE FIRING” will be given. Intervals of time are measured from the last words of the commands.

Quick fire.

TABLE III.—*Quick fire—Target E—Bobbing.*

| Range | Time | Scores minimum |
|----------------|--------------------------|----------------|
| 15 yards | 2 seconds per shot | 2 |
| 25 yards | 3 seconds per shot | 2 |

The target is operated as a bobbing target. Three to five seconds after notice is received at the pit that all is ready at the firing point the target is alternately exposed to view and turned away from view of the firing point; exposures are of two or three seconds’ duration, depending upon the range, with an interval of three to five seconds between exposures. The soldier stands at the firing point at “Raise, pistol.” The pistol is loaded and locked. Upon the first exposure of the target the soldier fires one shot at it before it disappears. He fires one shot at each reappearance until seven shots have been fired. The weapon is held between shots at “Raise, pistol.” The value of a hit on this target is 1.

Skirmish run.

TABLE IV.—*Skirmish run—Target E—Bobbing.*

| Range | Time | Shots |
|----------------|--------------------------|-------|
| 50 yards | 5 seconds per shot | 2 |
| 25 yards | 3 seconds per shot | 2 |
| 15 yards | 2 seconds per shot | 3 |

This firing is to introduce the element of moving forward. The soldier halts to fire. Considerable loss of accuracy would result from firing while walking or running.

Men to fire are formed in line at the 50-yard point, each opposite his own target, pistols loaded, locked, and held at “Raise, pistol.” The targets are edge to the front.

Four or five seconds after the pit is notified that all is ready at the firing point, targets are exposed twice for 5 seconds, with an interval of 2 to 5 seconds between exposures. The men fire one shot at each exposure. An interval of 10 seconds is then allowed, during which time the line advances at double time to the 25-yard point by command of the instructor, alignment being maintained.

At the expiration of the 10-second interval the targets are exposed twice for 3 seconds, with an interval of 2 to 5 seconds between exposures. The men fire one shot at each exposure. An interval of 7 seconds is then allowed while the line advances as before at double time to the 15-yard point. At the expiration of the 7 seconds the targets are exposed three times for 2 seconds, with an interval of 2 to 5 seconds between exposures. The men fire one shot at each exposure.

Pistols are locked before moving forward and are held at "Raise, pistol" between shots. Visual signals should be used in the pit in order that the commands for exposing the targets may not be heard at the firing line.

Record Practice.

Tabulation. The following tables prescribe the firing in record practice in the order followed by the individual soldier. The procedure is as in instruction practice.
Slow fire.

TABLE V.—*Slow fire—Target L.*

| Range | Time | Scores |
|----------------|---------------------|--------|
| 25 yards | No time limit | I |
| 50 yards |do | I |

Rapid fire.

TABLE VI.—*Rapid fire—Target L.*

| Range | Time | Scores |
|----------------|----------------------------|--------|
| 5 yards | 15 seconds per score | 2 |
| 25 yards | 20 seconds per score | 2 |

Quick fire.

TABLE VII.—*Quick fire—Target E—Bobbing.*

| Range | Time | Scores |
|----------------|--------------------------|--------|
| 25 yards | 3 seconds per shot | 2 |
| 50 yards | 5 seconds per shot | 2 |

Qualification. The record course, as above prescribed, is the qualification course. No separate course is fired as an expert test. The scores for qualification are prescribed under "Classification and Insignia," Part III.

PART III. MISCELLANEOUS.

Classification and Insignia.

Classification. All who are required or authorized to fire, and who are carried on the rolls of the organization during any part of the practice season, or who are attached for practice by proper authority, will be classified according as they have met or failed to meet the requirements of qualification.

All who are required or authorized to fire the dismounted course only will be graded, according to proficiency, as pistol experts, pistol sharpshooters, pistol marksmen, or unqualified. Cavalrymen, required to fire the mounted course also, are classified in addition as mounted pistol experts, mounted pistol sharpshooters, mounted pistol marksmen, or unqualified, mounted.

An officer who attains the grade of pistol marksman or better will retain that classification from the date of qualification until the next opportunity to requalify, or for one year if no opportunity for requalification is presented within that year. A soldier who has completed the dismounted course and is transferred thereafter, or who is discharged and reenlists, will not be given a second opportunity to qualify in the same year. In case the soldier, at the time of transfer, has not completed his record practice for that year, his company commander will complete his individual record sheet to date and attach it to the service record which accompanies him, and the soldier will complete his firing with the organization to which transferred. The same principles apply to mounted classification.

Requirements, dismounted course. The requirements for qualification in the several grades of marksmanship, dismounted, are given in the following table:

Classification, dismounted.

| Grade | Average percentage on
Tables V, VI and VII |
|---------------------------|---|
| Pistol expert..... | At least 80 per cent. |
| Pistol sharpshooter | At least 70 per cent. |
| Pistol marksman..... | At least 60 per cent. |
| Unqualified | Less than 60 per cent. |

In applying the provisions of the above table the soldier's percentage in firing each of the Tables V, VI, and VII is calculated separately; the sum of these percentages is then divided by three to give the final average percentage.

Insignia. To each officer or enlisted man qualifying for the first time as pistol expert, pistol sharpshooter, or pistol marksman, certain insignia, indicating his skill in marksmanship, will be issued. Insignia may be worn from date of qualification until the next opportunity to requalify, or for one year if no opportunity for requalification is presented within that year. Officers who are not required to fire may wear the insignia of last qualification.

Pistol expert's badge. To the pistol expert a silver badge will be issued. To those who have qualified as pistol expert for three years, not necessarily consecutive years, nor in the case of enlisted men, in the same enlistment, a silver bar will be issued on which the three years of their qualification will be indicated; the bar will be attached to the badge below the pin. For each additional three years of qualification an additional bar will be issued, each in succession to be attached below the one previously supplied.

Pistol sharpshooter's badge. To the pistol sharpshooter a silver badge will be issued. To those who have qualified as pistol sharpshooter for three years, not necessarily consecutive years, nor in the case of enlisted men, in the same enlistment, a silver bar will be issued on which the three years of their qualification will be indicated, and this bar will be attached to the badge below the pin. For each additional three years of qualification an additional bar will be issued, each in succession to be attached below the one previously supplied.

Pistol marksman's pin. To the pistol marksman when first qualifying as such, a silver pin will be issued.

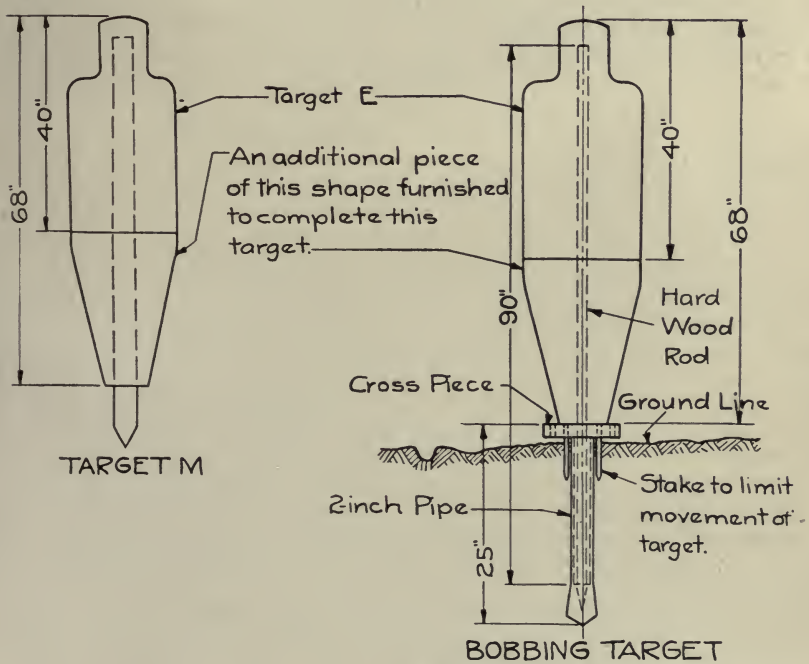
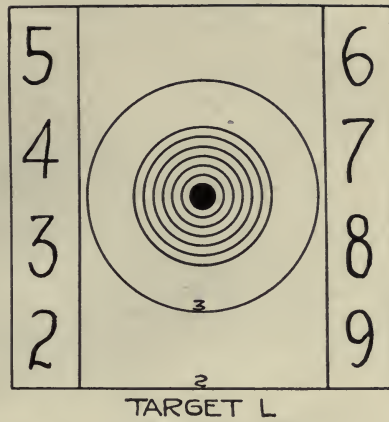
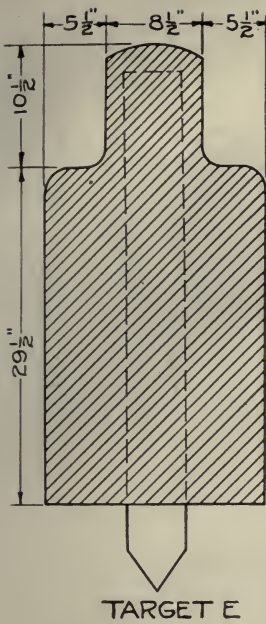
Targets.

The targets here considered are divided into two classes:

- a. Pistol targets.
- b. Miniature targets (for gallery practice).

Pistol Targets.

Target E. A drab silhouette made about the height of a soldier in a kneeling position, made of bookbinder's board or other similar material. Hits are valued at 1, and any shot cutting the edge of a silhouette is a hit.



Revolver or Pistol Range Practice

Target L. A rectangle 6 feet high and 4 feet wide, with black circular bull's-eye 5 inches in diameter. Value of hits therein, 10. Seven rings with diameter as follows:

| | Value of hit. |
|---------------------------------|---------------|
| 8½ inches | 9 |
| 12 inches | 8 |
| 15½ inches | 7 |
| 19 inches | 6 |
| 22½ inches | 5 |
| 26 inches | 4 |
| 46 inches | 3 |
| Outer, remainder of target..... | 2 |

Target M. Silhouette, representing standing figure, of which upper part is target T and the lower part a trapezoidal piece whose upper edge is placed closely against lower edge of target E. Hits count 1.

Bobbing targets. Target E, arranged to be fully exposed to firer for limited time. Edge of target toward firer when target is not exposed.

Miniature Targets.

Target X. A rectangular paper target, 8 by 12 inches. Black circular bull's-eye, 1½ inches diameter, value of hit 5; center ring, 4½ inches diameter, value of hit 4; inner ring, 7½ inches diameter, value of hit 3; outer remainder of target, value of hit 2.

Miscellaneous Data Concerning Pistol.

Weight, 2 pounds 7 ounces.

Trigger pull, 6 to 7½ pounds.

Total length, 8.593 inches.

Barrel:

Length, 5.025 inches.

Diameter of bore, 0.445 inch.

Rifling:

Grooves—

Number, 6.

Width, 0.1522 inch.

Depth, 0.003 inch.

Lands, width, 0.072 inch.

Twist, one turn in 16 inches, left-handed.

Front sight above axis of bore, 0.5597 inch.

Exterior Ballistics.

1. *Rapidity of Fire.*

a. This pistol has been fired 21 times in 12 seconds, beginning with pistol empty and loaded magazines in a table at side of operator.

b. Firing at 25 yards distance at a target 6 feet by 2 feet under the same conditions as in (a) 21 shots were fired in 28 seconds, making 21 hits, with a mean radius of 5.85 inches.

c. Firing 10 shots, using a muzzle rest at 25 yards distance, at a target 6 feet by 2 feet, a mean radius of dispersion of 0.855 inch has been obtained.

2. *Accuracy with Muzzle Rest.*

| Range | Mean radius | Mean vertical deviation |
|--------------|---------------|-------------------------|
| <i>Yards</i> | <i>Inches</i> | <i>Inches</i> |
| 25 | 0.855 | 0.619 |
| 50 | 1.356 | .910 |
| 75 | 2.244 | 1.422 |

The above figures represent the mean variations for several targets.

3. *Penetration in White Pine.*

| Range | Depth |
|--------------|---------------|
| <i>Yards</i> | <i>Inches</i> |
| 25 | 6.0 |
| 50 | 5.8 |
| 75 | 5.6 |
| 100 | 5.5 |
| 150 | 5.2 |
| 200 | 4.6 |
| 250 | 4.0 |

A penetration of 1 inch in white pine corresponds to a dangerous wound.

The penetration in moist loam at 25 yards is 0.95 inches.

The penetration in dry sand at 25 yards is 7.8 inches.

DEFINITIONS.

BOBBING TARGET. A target which is temporarily exposed to view.

BORE. The cylindrical cavity in the pistol barrel.

BULL'S-EYE. The black circular area in the center of the bull's-eye target.

BUTT. The embankment or other means used to stop bullets in rear of the targets. The plural "Butts" is used to designate collectively the parapet, pit, and back stop of a group of targets.

CALIBER. The interior diameter of the pistol barrel, measured between the lands.

CANT. To revolve the barrel of the pistol on its axis to the right or left while aiming.

CLASSIFICATION. The arranging of the individuals of an organization in groups or classes according to the degree of skill displayed in record practice.

COACH. A special instructor charged with the duty of correcting errors and giving advice and information to the firer.

COLLECTIVE PRACTICE. That part of range firing in which the principles taught in individual practice are applied to firing by group.

DISTINGUISHED PISTOL SHOT. An officer or enlisted man who has won three of the authorized medals in corps area or Army pistol competitions, or in the national pistol match.

GALLERY PRACTICE. Firing at short ranges with caliber .22 pistols.

GROOVES. The spiral channels within the bore of the pistol barrel.

INDIVIDUAL PRACTICE. The firing on the range by which the individual soldier receives his instruction and by which his qualification is determined.

INSIGNIA. Badges or distinguishing marks awarded for marksmanship.

INSTRUCTION PRACTICE. The prescribed firing on the range which precedes record practice and which is devoted to the instruction of the soldier.

LANDS. Surfaces of the bore of the pistol barrel between adjacent grooves.

LINE OF AIM. The imaginary straight line from the eye to the selected point of aim.

MARKING STAFF. A staff used by the marker in the pit to signal the position and value of hits on the target. The staff used in rifle practice, with disks removed, is suitable.

O'CLOCK. A term employed to indicate, by means of the divisions on the dial of the clock, the location of a hit on the target or the direction from which the wind may be blowing, as a 7 o'clock hit, a 5 o'clock wind. In speaking of the position of a hit, the dial is supposed to occupy the front of the target facing the firer, with 12 at the top of the target. In speaking of wind, the dial is supposed to lie on the ground, with 12 toward the target and the center at the firing point.

PARAPET. An elevation of earth or other material thrown up in front of the target to protect the markers.

PISTOL EXPERT. The highest qualification for skill displayed in record practice with the pistol.

PISTOL SHARPSHOOTERS. A grade of pistol shot just below that of pistol expert.

PISTOL MARKSMAN. The lowest grade of those who are given a qualification in pistol practice.

PIT. The space between the parapet and butt or bullet stop (occupied by the markers).

PRELIMINARY PRACTICE. The prescribed firing on the range which precedes competitions.

PREPARATORY INSTRUCTION. Garrison instruction, preparatory to range firing.

QUALIFICATION. The grade attained by individuals in record practice.

QUICK FIRE. The class of fire employed in instruction and record fire when bobbing targets are specified.

RANGE. Any tract of land over which firing with small arms is conducted. This term is also used to signify the distance to the objective from the firer.

RANGE OFFICER. A commissioned officer charged with the care, police, etc., of a target range and its accessories.

RAPID FIRE. The class of fire in which a time limit is set for completing a score.

SCORE CARDS. Pasteboard cards issued to competitors at competitions, giving the number of target of each competitor firing, with his order of firing, and containing a blank space for the records of the shots fired and for the signature of the scorer.

SCORE. A string of 7 consecutive shots. The term "score" is also used to express the record or register of number of points made in one or more scores.

SLOW FIRE. The class of fire in which no time limit is set for completing a score.

TARGET. An object presenting a mark to be fired at.

TWIST. The spiral formed by the grooves in the barrel of the pistol.

UNQUALIFIED. Those who in the last practice season failed to qualify as pistol marksman or better, or who for any reason did not fire the course.

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